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Original Articles.

THE EVALUATION OF ANTHROPOMETRIC DATA.*

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The term anthropometric data may be applied to the numerical results of all observations on the structure or functions of man, i. e., such observations as: weight, height, and bone lengths in general; girth of head, body or limbs at the different levels; lateral or dorso-ventral diameters of trunk at different levels; facial measurements, including facial angles; cranial measurements; pelvic measurements; strength tests; acuteness of vision, of hearing, of feeling, and of taste; time of sense-reaction; pulse rate; blood pressure; respiratory rate; expansion of chest; lung capacity, and amount of tidal air; number of corpuscles per unit volume of blood; percentage of hemoglobin of blood, etc. These are the more important groups of anthropometric data.

A glance at the wide field covered by such data makes it evident that a very large proportion of the research work done by medical men involves the recording of numerical data. There may be cited, for example, the following lines in which such data are recorded: the medical examination of school children; medical examination of army and navy recruits; insurance examinations; medical examination for certain positions in the civil service; medical examinations in college, Y. M. C. A. and private gymnasia; bone measurements in surgical practice; certain facial measurements, in ophthalmology; pelvic measurements, in obstetric practice; cranial measurements, in criminology and in hospital practice in mental diseases; many of the problems of pedology, pediatrics and orthopedics; and finally, clinical diagnosis and pharmacology; in short, almost every department of medical practice requires, at least, the occasional use of anthropometric data.

In these various fields of work great quantities of data have been collected and are being collected without being put to any use. The collection of such data is likely to be looked upon as a part of the routine in taking a case history; and, though in some instances valuable for subsequent reference, such instances are rare and the enthusiasm of the physician gradually abates as he finds that the accumulating statistics are never used. The result is that the statistical work is wholly dropped or reduced to the minimum in the case of the private physician or the specialist; while it is continued in a most mechanical and perfunctory manner by those conducting medical examinations in public institutions.

In those fields, e. g., criminology and pedology, where the anthropometric data have been carefully collected and properly utilized, general truths of very great value have been discovered. There is no reason to doubt that if the other fields were properly worked, they would prove equally fruitful. The whole difficulty rests with the methods which are in vogue for handling the accumulated data. The recorded data have only a potential value. One may make thousands of observations, but he can draw no conclusions from them until he groups and summarizes them.

This last-mentioned process is an essential one and may be called the evaluation of anthropometric data.

OLD METHODS.

In evaluating anthropometric data, it has been generally customary to group the individuals into classes and to find the arithmetrical mean or the average of the measurements or other data for each class. This involves the tabulation of the observations on the individuals of each class so that similar observations stand in vertical columns. The tabulation of the statistics is a long and wearisome task, but when one remembers that when the tabulation is complete, the work is only just begun and that every spare hour for weeks and months must be devoted to the exhausting work of adding columns of figures, he does not wonder that busy clinicians and medical examiners in the various institutions become discouraged in their attempts to get anything of value out of the statistics which they have so carefully collected.

The object of this paper is to outline a short and yet mathematically accurate method of evaluating the data —a method so simple that any school boy can apply it with small chance of error, and so easy that the oft-interrupted and preoccupied practitioner can use it at odd moments and while he is resting.

THE NEW METHOD.

The Belgian astronomer and anthropologist, Quételet,[1] was first to call attention to the fact that the arithmetical mean or average is of less value than the median value. The *median value* is that value which is so located in the whole series of observations of a single measurement of any group that there are as many below it as above it; i. e., that the number of values which it exceeds is equal to the number of values which exceed it. For a concrete case, suppose we wish to find the height of nine men taken at random from any audience.

* Read at the Fifty-second Annual Meeting of the American Medical Association in the Section on Physiology and Dietetics, and approved for publication by the Executive Committee.

1. Anthropometrie, ou mésure des diff. facultés de l'homme, Bruxelles, 1870.

Let their heights be 162, 164, 166, 168, 170, 172, 174, 176, 187 cm. The average is 171 cm., but the median or middle value is 170 cm. Which of these results is the more valuable? It so happened that there was a very tall man among those chosen and his height raised the average 1 cm. above the median value. Had there been a very short man instead, the average would have fallen below the median value. If a large number of individuals are observed, the chances are that there will be as many very short men as very tall ones so that the average will approach the median as the number of observations increase. For a small number of observations, then the median must be conceded to have more value than the average. But how shall we determine this median value?

In the first place the data must be recorded upon cards. Case data which are largely anthropometric, as in physical examinations in the army, navy or the gymnasium, may be recorded at once upon cards. Most clinicians record data upon clinical history sheets and file them alphabetically or otherwise. Any numerical data, first recorded upon clinical history sheets and which it may be desired to use, may be copied upon cards in order that the files shall not be disarranged.

The cards containing the data may be grouped as desired. Let us suppose that a school medical examiner has recorded upon cards the height, weight, head girth, chest girth, lung capacity, acuteness of vision and of hearing, for 10,000 school children. Each individual is represented by a card. The individuals may be grouped first as to sex. Let each sex be grouped as to age, and each age as to nationality, or social position of parents. Suppose there are 314 boys of 16 years representing families which had been for several generations in America. Such a group of individuals could be looked upon as a homogeneous group. How shall we determine their median girth of head? Let us arrange the cards in groups, putting in one pile all whose head girth is 50 cm. or fraction of a centimeter; in the next group, cards which bear a record of 51+cm. and so on, the result being as shown in the following table:

Girth of Head of 16-year-old American Boys.

Measurement.	50+	51+	52+	53+	54+	55+	56+	57+	58+	59+	60+	61+
No. of observations .	1	3	13	28	34	73	69	52	26	11	3	1

The total number of observations being 314, we have only to locate and determine the value of the 157th measurement from either end. Adding the observations from left to right (1+3+13+28+34+73=152) we find that the middle individual must be in the group whose head girth is 56+cm. This may be called the Median Group. Moreover, the middle individual is the 5th one in this group from the left or the 64th from the right. Now the 69 individuals of this median group have head girths ranging from 56 cm. to 57 cm. and according to fundamental biologic laws, they will be practically evenly distributed through this 1 centimeter. The 5th individual from the left must then have a head girth of 56 5/69 cm. or 56.072. This is the solution complete, and it could be easily obtained in twenty minutes, whereas to copy the numbers in columns and add them would require hours of the most fatiguing toil.

If it is desired to reduce this simple process to a mathematical formula, that can be readily done:

Let n = the total number of observations (314); m = the number of observations in the median group (69); l = the sum of the observations at the left of the median group r = the sum at the right; a = minimum value of the median group (56 cm); d = arithmetic difference in the minimum values of the groups d = 1 cm. in above, and m = median value to be determined.

Then:

$$M = a + [d\ (n \div 2 - l) \div m].$$

$$M = 56 + [1\ (314 \div 2 - 152) \div 69] = 56\ 5\text{-}69 = 56.072 \text{ cm.}^2$$

THE SIGNIFICANCE OF THE RESULTS.

But this question of the median value is broader than a simple statistical problem—it is based upon fundamental, biologic and mathematical laws. One could hardly follow the steps in the above presentation without noting that the number of observations for each separate value increases progressively from the two extremities toward the middle of the series where the maximum is represented by one large value or by two large and nearly equal values. Francis Galton[3] called especial attention to this and published figures to illustrate this law of distribution of values. The law may be formulated thus: Any structural dimension or functional property of any species of living thing tends to approximate a fixed standard or middle value, while the others will progressively shade down to a maximum in one direction and to a minimum in the other. This may be called the *law of distribution of biologic data*, understanding, of course, that it is the distribution of data concerning any one structural feature or functional property within any one species of plants or animals.

Table 2 shows the distribution of head girths of 1071 youths from 16 to 19 years old.

Table 2.—Head-girth, Boys 16-19.

Measurement. . . .	51	52	53	54	55	56 56.46	57	58	59	60	61	
No. of observations-	4	23	59	108	224	257	230	110	38	16	2	1071
Coeff. $(a+b)^{10}$. . .	1	10	45	120	210	252	210	120	45	10	1	1024

The distribution of these measurements illustrates the above formulated law. The computed median value is 56.46 cm. Note that of the 1071 observations, 711 of them fall within 1.46 cm. below and 1.54 cm. above the median value, while the 360 remaining observations "progressively shade down to a maximum (61 cm.) in one direction (110—38—16—2) and to a minimum (51 cm.) in the other." Figure 1 shows the 1071 cards distributed in the different groups as indicated in Table 2.

Table 2 shows a third series of values, viz., the coefficients of a binomial raised to the tenth power. If the expression a+b were squared—$a^2+2ab+b^2$—and this multiplied by a+b and so on to the tenth time, an expression of eleven terms would result and the coefficients would be 1—10—45—120, etc., as shown in the table. The sum of these coefficients equals 1024. If one compares this series of coefficients with the series of observations in the line above them he notes a remarkable parallelism. Now this is not the result of a rare chance: it is in conformity to a natural law. It transpires then that the law of the distribution of biologic data is the law of the series of binomial coefficients. The corres-

2. E. W. Scripture, Psychological Review, vol. ii, p. 376, under title, "Practical Computation of the Median," gives the formula: M=a+[l—r÷2 m.]. Subjecting Scripture's formula and my own to repeated tests, I find that the former is less accurate; i. e., both formulæ are approximations, but the one given above is the closer approximation and gives results within .2 of 1 per cent. of the real median while Scripture's formula often varies as far as 1 per cent. from the real median.

3. Natural Inheritance, London, 1889.

pondence of these series is made graphic in Figure 2 where the values are plotted in the form of a curve. Even with a thousand observations, the curve of distribution corresponds very nearly to the binomial curve: if there were ten thousand measurements it is certain that the two curves would be perfectly coincident.

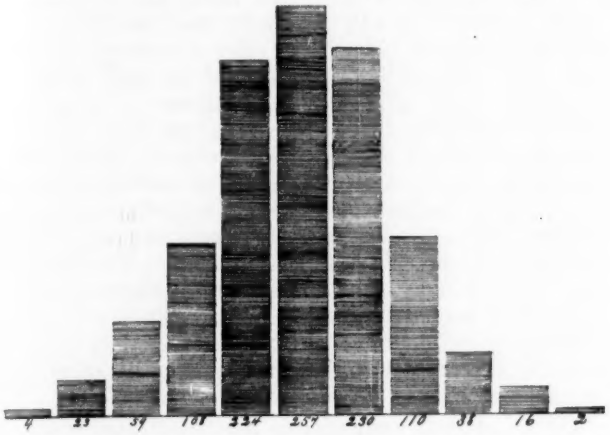

Fig. 1.—Showing the 1071 cards grouped as to the size of head-girth; the middle stack shows that 257 boys had a head-girth equal to 56 cm., but less than 57 cm. See Table 2 for other facts regarding figure.

The odd powers of a binomial 1st, 3d, 5th, 7th, etc., have an even number of terms and two equal maximum coefficients instead of one maximum coefficient. This feature of the binomial series also corresponds to something very frequently found, namely, that there is no one pile that is clearly the maximum pile, but that there are in the middle of the series, two maximum piles of fairly equal size.

What is the significance of this remarkable coincidence between the curve of binomial coefficients and that of the distribution of biologic data? This is a problem the solution of which belongs to the biologist rather than to

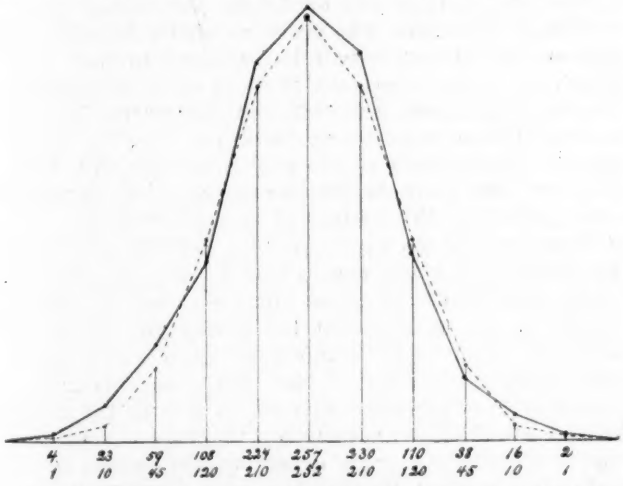

Fig. 2.—Showing the relation between the curve of biologic distribution and that of the binomial coefficients. The former is represented by the continuous line plotted from the upper line of figures and represents the distribution of 1071 boys with reference to girth of head; the median girth being 56.46 cm. The curve of binomial coefficients is represented by the dotted line and is plotted from the coefficients of $(a+b)^{10}$. This set of coefficients being chosen because their sum (1024) most closely approximated the number of individuals represented in the biologic distribution curve.

the mathematician. By way of suggestion, simply, the reader may be reminded: 1, that the principal biologic factor in determining specific characters is heredity; 2, that heredity involves a double influence—the father plus the mother—which may be represented mathematically as a+b; 3, that when a value is influenced by a series of variable factors it is found in mathematics that it would vary as the product of these factors. The only way heredity can act in a series of influences is in the series of succeeding generations which may be represented as a+b, a+b, viz., the paternal, (a), and maternal, (b), influences of the successive generations. The total influence of heredity could then be represented by $(a+b)\times(a+b)\times(a+b)$ to the nth power. If the coefficients of this product be plotted they will describe the curve shown in Figure 2. If the numerical data arising from the measurement of any one feature of the lineal descendants of the nth generation of an original father and mother (a+b) be grouped as in Table 2 and the numbers plotted, the curve will closely approximate or actually coincide with the binomial.

SUMMARY.

1. The collection of anthropometric data is almost universal in the practice of medicine. In the case of certain special lines of work these data are of fundamental importance.

2. Anthropometric data have a potential value, but no practical value as such. Only through some process of evaluation can the potential value be made practical and form the basis of general conclusions.

3. That method of evaluation which involves the use of arithmetical average is both time wasting and inaccurate, while the method based on Quételet's Median value is accurate, and is quickly and easily applied.

4. The median value is the value represented by the median measurement of a series of measurements; that is, that measurement which has as many values above it as below it.

5. The above described method of evaluating anthropometric data should be of value to all surgeons, pathologists, physiologists, and psychologists; to medical examiners in schools, gymnasia, insurance companies, the army and the navy; and to criminologists, neurologists, and anthropologists.

DISCUSSION.

DR. JOHN MADDEN, Milwaukee—Some one has said there is a divinity in the mathematical equation. Surely there is a divinity in mathematical precision as applied to anthropology as everywhere else. While Professor Hall was reading his paper it occurred to me that the mean measurement that is obtained after examining many hundreds of thousands of children should be kept in mind. That I suppose is the purpose of the measurement, to ascertain what a healthy, normal child of a definite age should measure and weigh and what he should be like. I presume that if we measured a great many million children we would get a definite mean. I do not know whether the mean measurement obtained west of the Rocky Mountains would hold good for the whole country, but the practical application is that if a child is brought to you and he has the marks of being abnormal you have at once at your fingers' ends the mean measurement of a normal boy at his age, and you measure him just as you would measure with a rule and square. If he does not vary from the established mean he is considered a good specimen. If, on the other hand, he does vary; if there is a certain group of measurements in which he does not correspond to the mean measurement, you have the full line of ancestry, environment and other considerations to investigate and put yourself in possession of accurate knowleuge to enable you to do what is possible for the child. In a paper which I have just written I have touched upon this subject, and it seems to me that something of what the Doctor has shown this afternoon should be in the books of the schools so that from the time the child enters school until the time that he goes out into the world it should be know what he has been. Then when we come to do anything for him, should he be a degenerate, we can put our finger upon the cause. We can

tell whether the trouble is in his environment, heredity or disease. While the beauty and the interest of the mathematical demonstration appeal to me, nothing appeals more forcibly than the importance of the measurement itself from a practical standpoint to be used every day by the physician.

DR. H. S. DRAYTON, New York City—I consider the work of the anthropologists and ethnologists, especially their custom of measuring brains and skulls, as vastly inferior to the method illustrated by Dr. Hall. Taking 150 or more crania of different races, measuring them by tape line and calipers in certain regions, and then striking a general average by dividing the aggregate measurements by the number of specimens, has been a procedure that scientific men appeared to be well satisfied with. This modern method, however, with its mathematical accuracy and differential applications, as shown us by Dr. Hall, demonstrates very definitely the crudity of old procedures, and discounts their statistical value.

DR. HALL, in reply—I think possibly I did not emphasize sufficiently that the whole object of this method is to accomplish what Professor Madden had in mind—the application of it by the men who are in position to collect large masses of data for statistical tables—showing in tabular form the evaluations for various groups of individuals, these to be published for the use of medical school examiners over the country. We are now in possession of considerable data, but we are only in the beginning because there has not been enough accurate and scientific grouping done. The average of 20,000 St. Louis children does not signify very much. The children should have been grouped first in various nationalities, and according to social conditions, besides being grouped according to ages. We want the practical application and not the theoretical.

THE EDUCATION OF THE DEGENERATE.*

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Those nerve cells which are most active, develop most in increasing length and complexity of their dendritic branches. The development takes place during physical as well as mental activity, and the education of one cell group, directly stimulated, leads to the education of more or less remote cell groups, by reason of dendritis contact. No matter, then, whether we reach the brain through the avenues of mental or physical activity, we shall have made a commencement in the education of the child just as soon as we can make him do something. If he be defective in mental development, in the development of the cells of the higher centers of the brain, and it is found that they can not be directly stimulated, then we must try to reach them indirectly, stimulating those of the motor area by muscular exercise. "If we wish to hasten the maturity of the brain, we must decide whether the formation of the myelin sheath can better be hastened by stimulation of the senses and intellectual work, or better, by muscular exercise. The latter way seems the more natural. We must, therefore, to begin with, consolidate the motor nerve paths which develop first, and after that seek to develop the portion of the brain concerned with intellectual work. Modern views show a tendency to confirm what the great philosophers of Greece already recognized, viz., that children ought to begin to read and write only with the tenth year. The conviction is again slowly maturing that our children begin too early, that it is injurious for the development of the brain to be fettered to the school desk when only 5 or 6 years old. The conviction is slowly making its way that no more time should be devoted to intellectual work than to muscular exercise. The modern education of youth, however, resembles more an artificial hot-house culture than a natural training of the human plant."[1] Muscular activity alone develops intelligence, the more complicated and varied the movements, and the greater the period of time over which they are extended—up to the age when development ceases—the better will the individual be educated on his purely mental side. Everyday observation confirms this view. The skilled mechanic of no book learning is generally a man of superior intelligence, a man of accurate judgment, good reasoning powers, and good morals. Here in America the mechanic, native born, has almost always a good, common-school education and is a diligent reader. In England, however, it is not uncommon to find skilled laborers devoid of book learning, yet men of no little intellectual force. The children, too, of such men often display intelligence of a high order and become brilliant scholars. They are, indeed, sometimes pointed out as exceptions to the rules of heredity, by those who fail to see the unity of physical and mental stimuli in brain development.

Often, indeed, some simple muscular movements are all that the unfortunate defective can be taught to carry out; it is the one breach which can be made in the wall which separates him from the ordinary physical and mental activities of mankind; but through this single avenue some development is generally possible. Said Dr. Martin W. Barr,[2] chief of Pennsylvania Training School for Feeble-Minded Children: "The motto of the schools—'We learn by doing; the working hand makes strong the working brain'—shows manual training to be the basis of the scheme of development, varied for each grade to suit the intelligence."

In the Elmira Reformatory equally good results are obtained in reaching the higher centers from the physical side. The defectives are divided into three classes: 1, those who are intellectually weak, but have powers of self-control; 2, those who are bright, but lacking in self-control, and 3, those who are weak, and also lacking in self-control. Great benefit has resulted to them from physical training, especially to those of the second class. Nearly all graduate with sufficient self-control from the manual trades' department to be put into the trades' school. The history of one particular case, No. 6.361, is given. He was a dangerous criminal who was made a good citizen by this system of manual training.

That "Satan can find something still for idle hands to do" is an old saw with a new interest; for we now understand that it is not so much the fault of the idle hands as the undeveloped brain resulting from that idleness. This, then, is our brief upon which we ask that every district school have the apparatus and instructors to educate the physical as well as the mental side of our children; not only for the reason that normal children need the physical education, but because certain defectives, certain incorrigibles may be educated and made useful through muscular activity when all attempts at education through merely mental processes fail.

But the work of our schools should go further than this. Just as it is the physician's duty not only to cure members of a family already afflicted with disease, but to make the conditions such that no others shall contract it, so the teacher shall do what he may to lessen the number of defective members of society; for, after all, where and during what period of life can matters relating to personal hygiene, which has so much to do with

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NOTE: This paper is a part of one chapter of a book which will soon be published under the same title.

insuring a sound body and a sound progeny, be better and more thoroughly inculcated than with the impressionable youth of the common schools? And it is encouraging to note that school men are alive to the importance of this question. Two years ago there came from a man who assumed the right to speak authoritatively on the subject, the edict that our youth were not being properly instructed in regard to the effects of alcohol upon the human system, that it is not a poison as is generally taught, but may, indeed, be the only food remedy which, under certain circumstances, will save life. As the alcohol question is by far the most important factor in the teaching of personal hygiene in our schools, this verdict aroused an enormous amount of discussion. This man went before the assembled school superintendents of the country and made an indirect plea for alcohol, teaching that it was a food and not a poison except when taken in excess. This he has reiterated in the columns of the lay press. So great was his influence that the School Superintendents' Association appointed a committee of seven of their members to inquire into his indictment of anti-alcohol teaching in our schools. It is encouraging to know that this committee utterly repudiated the indictment. Not only this, but they recommended, "that the scope of the investigation be so enlarged as to cover not only the topics already suggested, but the whole field of personal hygiene." This they declared after previously extinguishing the special plea for alcohol as follows: "The question of the supposed food value of alcohol is a technical one for medical—not for chemical—experts to determine and not one which needs to concern the man and woman who are engaged in the work of public instruction of children and youth. For them it is enough to know that its use as a beverage is injurious and that all authorities agree in deprecating the formation of the drinking habit, and in commending all practical efforts, through public instruction, to promote the cause of temperance."

Moreover, schools could greatly contribute toward the study of degeneracy by gathering statistics of all children who attend them. For instance, they could have written, with little trouble, in books prepared for the purpose, each child's status when he entered school. Let them cover such questions as physical development and state of health; whether parents are living and their condition of health; whether any brothers or sisters are dead, ill, or in any way mentally or physically incapacitated; whether the race from which he descends is long or short lived; and, if notably short-lived, what has been the chief cause of death; whether any relatives near or remote were insane, imbecile, tuberculous, syphilitic, or alcoholics; what the occupation and habits of the parents; what their social status; and lastly, what is the child's environment? Knowledge of this kind would be of enormous advantage, not only to the teacher, but to society at large, for each individual would then have a tangible record and any shortcomings on his part in more mature years could be traced to their proper causes and adequately treated.

Very valuable statistics of the social and moral status of the parents of industrial and reformatory school inmates are gathered in England and Scotland by those who are officially appointed to collect contributions from the parents for the inmates. These collectors see the parents in their homes at stated intervals, for a period of years, and learn, as far as it is possible for an outsider to learn, the real character and surroundings of the offender's immediate ancestors. "It was stated by Mr. McDonald, one of those agents, in reply to a question of the Royal Commission, that only 6 per cent. of the children in the industrial schools had homes fit to live in. Mr. McDonald's experience related to the parents of Scotch children; in some parts of England the percentage of parents of respectable character is somewhat higher than Mr. McDonald's estimate."[3] Analysis of fifty parents of the industrial school pupils are given. "In the fifty cases 648 summonses were served—an average of 13 summonses for each person—43 warrants were issued and 94 commitments to prison made out. Of the 94 commitments to prison only 7 were actually imprisoned: 1 served six terms; 1 five terms; 2 three terms, and 1 of them one term of imprisonment."[4] These statistics are valuable as far as they go, but an inquiry into the ancestry for two or three generations back would make them much more valuable in determining the relative influence of heredity and environment as the cause of wrongdoing .

Here, again, we come face to face with these important factors in the production of social defectives. What can be done to check the evils of bad heredity and bad environment? Should man but use the same intelligence in dealing with this question that he displays in the breeding of domestic cattle the question would be promptly solved, so far as heredity is concerned; but he will not—he never will. That sympathy which Mr. Sutherland calls a "natural morality" is opposed to it; the general recognition of "liberty" and man's "natural rights" will never permit it. Indeed, the right to marry, the right to procreate his kind, no matter what his misfortunes may be in the inheritance of a debased mind or body, is a right which society will not infringe until altruism becomes as firmly implanted in the human breast as egoism is now. When the whole race becomes so unselfish, so self-sacrificing, that even its degenerate members recognize the wrong they do to society in propagating their kind, and voluntarily give up this fundamental right, then will improvement by suppressing the birth of defectives be possible. Do you suggest that these be compensated by the state, for giving up their right to marry, that the state shall give them an equivalent in money? If you think such a scheme possible, it is quite likely you underestimate man's procreative desires.

A writer[5] describing the life of the southern mountaineer tells the following anecdote: "I saw a boy once, astride a steer which he had bridled with a rope, barefooted, with his yellow hair sticking from his crownless hat, and in the blubbering ecstacy over the fact that he was no longer under the humiliation of accepting $75 a year from the state. He had proven his sanity by answering one question. 'Do you work in the field?' asked the commissioner. 'Well, ef I didn't,' was the answer, 'thar wouldn't be no work done.' I have always feared, however, that there was another reason for his happiness than balm to his suffering pride. Relieved of the ban of idiocy, he had gained a privilege—unspeakably dear in the mountains—the privilege of matrimony."

A recent writer[6] suggests that the hereditary social defective be gently chloroformed into a more perfect world; but where will you stop? Who is wise enough to say that this is a bad specimen which must be destroyed root and branch, while this, his brother, is not quite so bad, and, therefore, shall live and propagate his kind? Some have advocated mutilation to make procreation impossible. Curiously enough, it is the male only which is to be treated thus. Why the unsexing of the

female for the same cause has not been advised by these writers is not apparent. However, this operation would undoubtedly be as strenuously opposed as death itself.

Not only is such radical legislation as that suggested above never likely to be enacted, but mild, conservative laws, looking to the prevention of fraud in making the marriage contract, are opposed, as we see in the proceedings of various state legislatures every year.

To curtail the production of defectives by actual destruction of those who are so unfortunate as to be born, by mutilation, or by harsh laws, seems, then, practically impossible; we shall act much more wisely if we turn our attention to improving the environment which is the wellspring of so much vicious humanity. Shall we kill the degenerate offspring of the alcoholic, and never lift our hands or voices against the thing which is producing the degeneracy? How much of the sum total of degeneracy would be abolished by the abolition of alcoholic beverages? The question is not easy to answer; but it is entirely safe to say that alcohol is responsible for more degeneracy than all other causes combined.

Speaking again of the parents of pupils in the reformatory schools in England, Morrison[7] says: "As a rule parents who go to prison are hopeless drunkards; the remainder escape by payment of the fines. A large number of the parents are engaged in highly paid employments; in many cases it is not poverty which hinders them from fulfilling their parental duties, it is simply vicious habits of life. At the very least eighty of every hundred of them are addicted to vicious if not criminal, habits; the children came into the world in a polluted moral atmosphere, they are contaminated from the very earliest infancy without being aware of it; and, although their status is normal as far as the number of their parents is concerned, it is in the highest degree abnormal when the character of these parents is taken into consideration."

McKim[8] quotes as follows: "Of all hereditary taints, alcoholism is undeniably the most frequent and among criminals it is found almost always alone or in connection with other taints. It is the most common cause of degeneracy, and our prisons are peopled mostly with degenerates or with the children of drunkards. When in the ancestry of any criminal we can not find insanity, or epilepsy, or hysteria, we shall find nine times out of ten that alcohol has been the cause of all the trouble. The other taints may often skip a generation, but this is rarely the case with alcoholism. Alcohol is a poison that pardons not."

But what need to pile up evidence to prove the responsibility of alcohol as the chief factor in the production of degeneracy? The evidence is endless. It may be found on every hand. Look to the defective individuals in your own neighborhood; are they not the children of alcoholic parents, of an alcoholic father, at least? The one imbecile in my own vicinity is the son of a one-time alcoholic father. His coming cured the father of his vicious appetite; but what a price to pay! A young woman who has two score of babies to care for in a kindergarten tells me of a case of alcoholic stupidity in the person of a little lad, the offspring of a beer-drunken father and mother. He sits for hours, seeing nothing, doing nothing, apparently conscious of nothing. She has as yet been unable to arouse him to any kind of activity. This young woman was one of a class to listen to a few talks on the subject of exhaustion in children; and the keen interest she takes in this subject of inherited weakness in the children of alcoholics shows how much good could be accomplished by giving instructions of this kind to teachers.

Start wheresoever you will in the study of this subject of dealing with the hereditary criminal, with the incorrigible, with the defective of society, and when the evidence is all in, the overwhelming responsibility of alcohol stands out as the greatest, most important factor of degeneracy. If you are honest with yourself, no matter what your personal prejudices may be, you will accept this conclusion, for the evidence warrants it. The fight against degeneracy is a fight against alcohol; for let us remove this cause, because it is the most tangible and can be removed if we but will do so, and we shall see that our work is well towards completion.

Where the child is uncontaminated by heredity, viciousness is easily cured. A simple removal from evil surroundings is all that is needed to make good instruction immediately effective. Let the child be well fed; let him be properly clothed; let him have an abundance of room to move about, preferably a large field with forest, lake and stream near by, insuring an abundance of fresh air and exercise. Are not these ideal conditions for a proper education? Let the teacher, in co-operation with parent or guardian and physician, determine through what avenue the child's brain may best be reached to begin cell development, and let that avenue be chosen as the most available to reach the highest degree of development, the most useful education of which he is capable. When the degree of faulty development is such that it is not proper or profitable to deal with him in company with his more normal fellows, the child should be removed to an institution whose particular function is the education of defectives of his class. It is only with those who are faulty in a minor degree that we speak here; those who give much trouble accomplish little in the common schools, and are liable to become criminal in more mature years from lack of proper handling in the common schools. Let the school be a real "brain conditioning house," and do not urge the boy, do not irritate him with the, to him, detestable intricacies of Latin grammar, if he has a love for chemical experiments, for planting things and watching them grow, or for making things with saw and plane; do not blight his love for the free outdoor life of a herdsman or a farmer, to make a poor lawyer or a worse minister. Let there be teachers enough to give the pupils individual attention, and let the teachers be wise enough to see all the differences in the characters developed. No teacher can properly supervise the instruction of more than ten pupils. It is poor economy to put fifty or sixty or more pupils under the care of a single instructor. Their characters will never be known; their hopes, their aims, their ambitions, their secret desires, the knowledge of which is so important to insure the best results—the knowledge, indeed, of which is so absolutely necessary if the school is to be in fact a "brain conditioning house"—can not be known to him. Moreover, the instructor should constantly have in mind the child's heredity, what has been the mental and physical bias of his ancestors, and this he can not do when he has half a hundred or more to deal with. Nor is it possible for him to impress his own individuality upon so many. What the teacher actually is, what the pupils know him to be, what his ideals are and how closely he lives up to them, are matters of prime importance to pupils in this their imitative age; but the teacher's personality loses its force in direct ratio to the number among which it is distributed.

While the utmost freedom should be granted to defectives at school, they should nevertheless be held strictly accountable for their conduct. Less, very much less, should be forgiven in their conduct than in the con-

duct of the normal child. There is, on the contrary, a disposition in society to regard the offenses of these not as faults, but as symptoms of disease, to be condoned and forgiven on the ground of hereditary lack of self-control. Nothing could be more mischievous. One of the first things one of this class needs to learn, is that because of this lack of self-control he must be the more careful to avoid all occasion for giving offense through committing a wrong act. Once let him understand that he is regarded as the unfortunate victim of circumstances, and he will cast all self-control and efforts at self-control to the winds at once, yielding wholly to his vicious impulses. A youth of this kind under the author's care for a number of months improved in his conduct as soon as he was given to understand that he would be held strictly accountable for what he did. He had an alcoholic relative whose irresponsibility he had often heard asserted by a medical man, and drew the natural inference that when he, too, did wrong it was the disease and not himself that was at fault.

CONCLUSIONS.

Finally, the writer wishes to say a few words for the sake of emphasizing some of the propositions stated in this paper. They are these: Education is not merely the imprinting, the photographing of ideas upon the cells of the brain; it is a definite, biologic process, attended by development of the cells in a tangible way, the increasing of their bulk, the increasing of the number, length and complexity of their dendritic fibers, and that the brain which has the most cells thus developed, in all of its parts, belongs to the best, most widely educated individual. Man is born with many millions of cells which never become educated, which remain in the embryonic state, without axis cylinder and without dendrites. Certain individuals are born with deficient cell development, constituting them social defectives, degenerates, incorrigibles, criminals by heredity. The problem of reforming these is to bring about such cell development as will give them the normal individual's sense of right, the normal ethical sense, as will give them sufficient power to control their vicious impulses, and make proper conduct possible. The education of any group of cells leads to the development, though in a less degree, of all cells with which these come in contact; so that if the individual may be taught nothing more than a few muscular movements, at first, those will assist him in obtaining a more general education.

Heredity is the most potent influence in determining the characteristics of the individual. Degenerate ancestors can not produce sound, healthy progeny. Next to heredity, environment is the most potent influence determining conduct; because man, especially in his youth, is imitative in the highest degree. Degenerative changes in the individual of one generation, caused by the habits of a vicious environment, are transmitted by heredity to the progeny of the subject of acquired degeneracy Here they become a permanent heritage. Removing lesser degenerates from a vicious environment may so far restore them to the normal condition as to eliminate the degeneracy in the course of generations.

As it is not likely that heredity will ever be controlled by society through legislative enactment or otherwise, all efforts at eliminating degeneracy must be directed through two channels—education and change of environment.

In education the value of physical training must be recognized as equally important with or more important than mental training. Indeed, physical training must be regarded as the sole avenue, in many cases, through which the undeveloped brain cells may be reached; and, under all circumstances, cell development, through coordinated muscular movements, should go hand in hand with development through purely psychic channels.

As alcohol is admitted, by all competent authorities, to be the cause of by far the greater part of degeneracy, incorrigibility, criminality, the first step toward eliminating these conditions should be directed against the drinking of alcoholic beverages. The ninety million gallons, or more, of alcohol consumed annually by the people of our country, destroys more brain cells, produces more defectives and criminals than many times all other causes combined.

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DISCUSSION.

DR. WINFIELD S. HALL, Chicago—It has been clearly demonstrated in this country that the mental development can be very greatly modified through physical development. In the case of the more pronounced examples of arrested development both mind and body are involved. In all such cases a successful result is reached only through the avenue of physical development. Hence physical development is absolutely essential and, in fact, must precede mental development in all cases of arrested development. Even in a normal child I believe that physical development is an essential preliminary to the broadest and most liberal mental development. Statistics all over this country and England show that to be the case. Another point is the influence of alcoholic heredity on these degenerates. It has been shown that a vast majority of the degenerates are from parents one or both of whom are addicted to the use of alcoholic beverages. This has been shown over and over again in the work at the Elmira Institute. These two points are as firmly established on statistical bases as any two facts in the whole realm of statistics.

DR. H. S. DRAYTON, New York City—I think the term "degeneracy" covers a broad margin of defect. We go among those who have to do with the insane and find a great variety of opinion as to what constitutes insanity. So broad indeed is the margin in which unbalance of mind exists that most people—I do not include the present audience, of course—appear to have some of the elements of "degeneracy" in their organisms. Dana wrote a paper on the topic and said that the stigmata of degeneracy were very broadly distributed. The Lombroso school describes some 30 or 40 somatic features that point to psychic defect. Should we try ourselves by these it strikes me that few of us would pass an examination. As to the influence of education on degeneracy it strikes me that experiments made in different institutions of this country and Europe tend to show that scarcely any young person can be found who is not susceptible of improvement to a considerable degree. This fact was emphasized by an experiment made at the Perkins' Institution for the Blind near Boston when under the management of Dr. Samuel G. Howe. An assistant to Dr. Howe tried an experiment with an idiot—a boy so low in sense defect as to be called "the oyster." In whatever posture he was placed he would lie until moved. He seemed without sense or sensibility. The assistant, not knowing what was best to be done, sat down beside that wretched being and read Greek for some hours every day, his idea being to obtain if possible some expression of attention or interest. After reading in this way for some three months he stopped one day and turned away, when he heard a semi-grunt, the first indication of anything like attention. Later, the "thing" added a slight movement to the grunt. Dr. Howe was so gratified with the small result that he had the work

continued, and in the course of a year or two "the oyster" was actually trained to be of service to himself and the institution. The incident warrants us in not despairing of improving the state of average "degenerates."

DR. JAMES PUTNEY, Charleston—I have had some experience in the oversight of the people in our county workhouse, and on inquiring into the cause of the conditions I have very frequently learned that the parents or grandparents of the subjects were drunkards. Most of the fathers or grandfathers were drunkards and some of the mothers.

DR. MADDEN, in reply—Of great importance is the so-called "crossed education" in which Professor Scripture of Yale University has shown that teaching one hand to become dexterous, rapid and strong, a large percentage of the same kind of education is given to the other hand although it may not be used at all. Not only this, but if a certain number of muscular movements be carried out with the one hand we may instruct the other hand to this same work in 30 to 40 per cent. of the time required to instruct the first hand. It has been found too, that not only when one arm was exercised did it increase in size, but also the other arm increased in size although it was not exercised. I believe we come nearer to appreciating what an education is when we look at it from a biological standpoint and we say that giving an education consists in developing the nerve cells, giving to them axis cylinders and dendrites, and the more dendrites the better the education, from the biologist's standpoint.

As to what is degeneracy, I think the word is very much overworked. When a man ceases to act in harmony with his environment and his conduct is not in accordance with the best interests of society, and does this through some defect in his nervous organization, especially if the fault is congenital, he is termed a degenerate. Our living in the midst of an evil environment may be constantly acting out of harmony with it in doing good. Of course, such a one would not be called a degenerate. One inheriting a vast fortune might be possessed with an altruistic notion that it was his duty to give it away, and in its disposal he might exhibit many eccentricities; still he would hardly be called a degenerate, so long as his acts contributed to the happiness of others. In spite of the fact that he might show an abnormal nervous make-up, it is very likely that he would be called a philanthropist. If a beggar applying to such a philanthropist for alms, in being refused should knock the eccentric philanthropist down, the latter would stand a chance of being called a degenerate. It is not so easy to define a degenerate; we recognize him much easier than we define him.

THERAPEUTIC INDICATIONS SUGGESTED BY THE CONDITION OF THE BLOOD.*

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We are in the age when a better understanding of pathology and bacteriology has shown the absurdity of many pseudospecifics and of symptomatic treatment. We realize more and more the "phusis" of Hippocrates, the "archeus" of Paracelsus, the "pneuma" of Hoffmann, the "anima" of Stahl, and the "vis medicatrix naturæ" of later writers, which power Hahnemann so well demonstrated with his multiple dilutions of nothing, allowing disease to recover without interference. Also, we recognize the uselessness of attempting to cure or even to stay organic disintegration or obliteration.

While acknowledging the above, I think we have become too pessimistic therapeutically, and while we are directing our energies and remedial agents to the etiology and pathology of disease, we have forgotten to better, or correct, or aid the normal metabolism of the body.

Too many books on practice and too many teachers instruct carefully in the etiology, pathology, symptomatology, diagnosis, and prognosis of a disease and then briefly delineate a specific treatment, or say there is no treatment of any avail. The student thus learns to treat the disease by name only and does not treat the disease plus the individual who has it. Thus it is that many an unscientific practitioner of to-day, treating the patient and not making or caring to know the diagnosis in a doubtful case, continues to be in as great or greater demand than the physician who carefully makes the diagnosis, scientifically treats the disease, but forgets the man who has the disease.

Rather than ramble over the list of functions of the whole man, I propose to limit my remarks to a consideration of the blood, believing that in it may lie the wavering balance as to whether the patient survives or succumbs to a disease.

We can not properly treat any diseased organ or disturbed function unless we first know the physiology of that organ, and then the pathology of the disease or condition, the symptoms and signs showing us the degree to which this pathology has extended and giving us the prognosis for our treatment. Next, we must know the etiology to remove it if we can. The plan of treatment thus reached is rational and scientific, but in initiating it and carrying out such treatment it will often not be successful and will rarely be Asclepiades' *"tuto, cito, et jecunde curare"* unless it is modified to fit the man himself.

I trust I may be pardoned if for a moment I speak of the physiology of the blood. The gross constituents of the blood, viz., the plasma and its contained gases, the red corpuscles and the white corpuscles, have normally a certain slightly variable relationship to each other, and how easy it is for this relationship to become abnormal and react to the disadvantage of the whole life process.

While the specific gravity of the blood has a wide range of from 1040 to 1070, variations beyond these limits may have a wider significance and influence than we have previously considered. A much more variable property of the blood is its alkalinity, which is so readily increased by food and so constantly lessened by muscular exertion.

The range of from four to five millions of red blood corpuscles per cubic millimeter varies physiologically with the nutrition, the manner of life, and with age. The physiological diminution after meals is probably due to the destruction of the red corpuscles for the production of the bile pigment, while the decreased number of red cells in females during menstruation is probably due to the direct loss.

In normal conditions transportation to a more rarefied atmosphere will increase the number of red cells, showing that there is a surplus of red cells lying somewhere ready to be poured into the blood stream if there is a demand for them.

Studying the red corpuscles from a clinical and a diagnostic standpoint, we must take into consideration the osmosis that takes place through the stroma of the red cell, as we know that when they are large and well rounded the blood plasma is of low specific gravity. On the contrary, if these cells are shriveled and crenated we know that the plasma is concentrated and of high specific gravity. A large number of nucleated red blood corpuscles, except in embryonic life, shows that there is

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Materia Medica, Pharmacy and Therapeutics, and approved for publication by the Executive Committee: Drs. Thomas Hunt Stucky, Leon L. Solomon and N. S Davis, Jr.

something wrong with the early life of the corpuscle, it not having completed its usual cycle to maturity.

Ninety-five per cent. of the contents of the red corpuscle is hemoglobin, which is a very unstable compound, being readily set free by bile acids circulating in the blood, or by poisons such as potassium chlorate. The coloring matter thus set free circulates in the plasma and is deposited in the organs or passes off by the urine. Many disturbances of the system as well as poisons may set free this hemoglobin. This is, of course, notably true in profound malaria.

Only 4 per cent. of this hemoglobin is hematin, and in this hematin is found the iron which is the element of oxygen and carbonic acid exchange. This constant change seems to do no injury to the blood corpuscles, but as the hemoglobin is the origin of the bile pigment and as bile is constantly present, the red cells must constantly die or be destroyed, hence new corpuscles must be formed. Though the average life of a corpuscle is not known, it is estimated by some authorities as fourteen days.

The principal origin of the red corpuscles in the adult seems to be the red bone marrow, and it is interesting to note that after severe hemorrhage the nucleated corpuscles of the bone marrow are increased in number and many appear in the blood stream.

The spleen, which may be an originator of red cells before birth, certainly becomes a reservoir for them during life, and under requirements of the blood may give up some of this reserve supply to the blood stream.

How the red corpuscles meet their death or are disintegrated for bile pigment products is not quite known, but physiologists tell us the histology of the spleen is admirably adapted for storing red corpuscles, and here they are probably principally destroyed, the splenic vein always containing more hemoglobin than is found in any other part of the circulation. This hemoglobin is then taken by the blood stream directly to the liver and is there manufactured into bile pigments.

So much for the physiology, as far as we now know it, of the red blood cell. Now, what do we know of the white corpuscles? Under the microscope we find various types of white blood cells, the simplest classification of which is into the following: 1, lymphocytes, which are similar to the cells found in the lymph glands, contain nuclei, and are not capable of ameboid movements; 2, the mononuclear leucocytes, which are large corpuscles and have ameboid movements; 3, the transitional leucocytes, which are the transitional stage of the mononuclear to the polynuclear leucocytes, and 4, the polymorphous or multinucleated leucocytes, which are large corpuscles with several nuclei and very active ameboid movements.[1]

It seems clear that the mononuclear leucocyte develops into the polymorphous leucocyte, but whether the lymphocyte is an earlier stage of the mononuclear leucocyte is not known. It seems proved that the lymphocytes develop in the lymph glands and lymph follicles in the so-called germ centers of adenoid tissue that multiply by karyokinesis and are then poured out into the blood plasma.

Huber[2] thinks that the leucocytes may have various origins, which he separates by the staining properties of the granules, the neutrophile developing in the blood from mononuclear leucocytes, which have their origin in the spleen or bone marrow. The eosinophile leucocytes he thinks in all probability come from mononuclear cells which are found in the bone marrow, and they may also develop from connective tissue, while the leucocytes with the basophile granules, he says, probably enter the circulation from the connective tissue of certain regions.

The duties of these leucocytes seem to be first to protect the body from pathogenic bacteria by phagocytosis, while Howell[3] says that the lymphocytes seem to aid in the intestine in the absorption of peptones and fats.

We know little or nothing of the life history of these cells, but believe that as they normally disintegrate, they probably furnish some proteid material to the blood. We know little or nothing of the diminished number of white cells, but we do know something of an increased number, or leucocytosis, by which term we mean a temporary increase in the number of white cells. This temporary increase normally occurs after each meal at the very time when the red cells are less in number, the red cells perhaps disintegrating to form more bile while the white cells are poured out to aid in the absorption of the nutriment. Anything that irritates or stimulates the lymph glands must increase the number of white corpuscles in the blood.

We have not paid enough attention to the blood plasma or to the possibility of its being modified in disease, especially in anemias. When we consider the variations of the red blood corpuscles under the microscope caused by differences in the density of the surrounding fluid, we realize how very important in many cases a knowledge of the character of the plasma would be. When we study the physics of osmosis and the physiologic action of absorption and excretion, we should also consider the character of the blood plasma. Chemistry shows us that through an animal membrane there will be an exchange of solutions if the osmotic pressure of the two fluids is dissimilar; the salt, more or less slowly, depending upon its character, will pass from the stronger solution into the weaker, and water will pass from the weaker into the stronger until the osmotic equilibrium is established, at which time the solutions are said to be isotonic. Certain membranes of the body, notably true of the intestines, allow water to pass through freely by this osmotic force, but will retain the salts until an equilibrium is established. Again, we find that membranes may be permeable to one salt and not to another, these salts, then, having slow absorption. Such is true of the cathartic salts in the intestine, which tend to cause osmosis of water and are very slowly absorbed and hence produce watery purging.

We have not time to consider the elements of the blood plasma, but it may be noted that calcium salts in the blood favor coagulation, possibly a clinical indication for calcium in bleeders and the blood plaques or platelets seem to have to do with the coagulation of the blood.[2]

The variations in the character of the plasma must cause variations in the rapidity with which certain fluids or salts may be absorbed, or possibly may affect the absorption of the nutritive products of digestion, and hence there can be such a condition of the plasma that it can not absorb the materials or salts which are necessary for the growth of the cells and the nutrition of the body. Here we come to the question as to why, when there is sufficient iron in the food it may not in certain cases be absorbed, as in chlorosis.

My reason for this discussion would not be evident if I did not speak for a moment of the physics of the

1. Huber's Histology, p. 173.
2. Ibid., p. 176.
3. American Text-Book of Physiology.

blood and therefore the importance of the consideration of the blood in its totality as well as in its component parts.

A normal adult has one-thirteenth of his body weight in blood; in other words, a man weighing 170 pounds should have 13 pounds of blood. This proportion, of course, is not true in the obese and is not true in children. We undoubtedly generally forget that, roughly speaking, from nine to fifteen pounds of the adult weight is constantly in motion, and while I do not wish to revert to the English and Italian physical medicine of the 17th century, we should perhaps recognize the force that it takes to move this weight and how important it is in weak conditions for the individual to be in a horizontal position and not be compelled to propel the whole of this weight against the force of gravity.

At any given time one-fourth of this blood is in the heart and larger blood vessels, one-fourth in the liver, one-fourth in the muscles, and the remaining fourth is distributed among the various internal glands and organs. In hyperemia of the brain or internal congestions, we undoubtedly have a disturbance of this normal distribution of the blood, which by various well-recognized physical methods we more or less successfully bring back to the normal condition. I also venture to say that there can undoubtedly be too much blood at the surface of the body giving a feeling of warmth to the skin, as in some neurotic women. These patients always complain of heat, and probably have a diminished amount of blood in the glands and digestive organs, and hence their imperfect nutrition.

We are now in the age of a better understanding of the vasomotor system and recognize the opening and shutting of the arterioles and the consequent flooding or anemia of the capillaries as a very important element, not only in diseased conditions, but in the normal welfare of the individual. When we consider that we can cause anemia of the brain by hot sitz-baths, and that even slight irritations of the stomach, or intestines can cause dilatation of the abdominal vessels, which vessels can hold all the blood of the body if they become paralyzed; when we know that we can cause serious cerebral congestion by cold baths and chilling of the body; when we know that we can cause peripheral anemia enough to produce gangrene with continuous large doses of ergot, and that with nitro-glycerin we can cause sufficient dilatation of the blood vessels to produce anemia of the brain and fainting, we have a power presented to us which I do not think we sufficiently consider or sufficiently utilize to the advantage of our patients.

In the first place we are not careful enough in fever processes to keep the blood at the surface of the body where it cools and keeps down the temperature, and therefore saves the waste which high temperature will cause. We have all seen a profuse early sweat abort or prevent the chill in a malarial paroxysm when we have had no time for previous curative treatment. This, of course, simply means the dilatation of the surface blood vessels, thus preventing the chilling and the consequent internal congestions.

The condition of vasomotor ataxia plays an important part in many functional disorders, notably true in neurotics and neurasthenics. When the blood should be at the surface, the surface vessels are contracted and there is too much blood in the internal organs, perhaps notably the brain, as at night, causing insomnia; when there should be anemia of the surface, there is a flushing of the skin in these cases, giving sleepiness in the daytime and perhaps an imperfect digestion, constipation, and other functional disturbances. This condition of vasomotor ataxia seems to be present in marked degrees in most cases of hysteria.

In considering these displacements of the blood we come to the study of the cause of contraction and dilatation and find that the principal vasomotor center is in the medulla oblongata, which, as well as the peripheral vessels, is readily stimulated by various substances. In the normal individual the thyroid gland seems to furnish a vasodilator, while the suprarenals furnish a vasocontractor element. Possibly these two secretions regulate the peripheral vasomotor system. If either of these functions is disturbed we have varying symptoms, depending upon which one is in predominance. I feel firmly convinced that it is not at all necessary to have a developed Graves' thyroid disease for us to have an increased secretion of the thyroid. I believe that neurotics and possibly hysterical cases have an increased secretion from this gland, and that various of our functional disturbances, such as palpitation, cerebral irritability, insomnia, sweating, nervousness, hot flashes, muscular weakness due to lack of blood-vessel tone, can be due and is due to this increased secretion.

On the other hand, I feel that continued high tension of the arteries, with the consequent chronic endarteritis, gouty and atheromatous conditions, can be due in later life to the diminution of the thyroid secretion and the predominance of the suprarenal secretion, causing the contraction of the peripheral blood vessels.

In the condition of persistent vasodilatation, due, as I think, to hypersecretion of the thyroid, we should spend a great deal of care in toning up the peripheral blood vessels by teaching them to open and shut, by various cold water applications, douches and sprays, and insisting upon a quiet mental as well as physical life to prevent the pounding of the heart weakening these dilated blood vessels. Massage and graduated physical exercises will increase the muscle-tone, which will contract the blood vessels of the muscles, which vessels contain one-fourth of the body's blood.

On the other hand, in the condition of too-high tension of the blood vessels, our aim should be to relax, and I trust I will not be accused of going back to the Methodists in the first century when I say these conditions need such treatment as will relax the blood vessels and increase elimination. Too high tension calls for exercise, warm baths, free catharsis to reduce the amount of fluid so that the tension will not be as great, dilatation with small doses of thyroid gland daily, nitroglycerin in small doses, as 1/400 three times a day, or small doses of chloral.

So much for the gross chronic conditions, but how much more carefully we ought to watch the condition of the blood vessels and the surface of the body in acute conditions in which the blood or life-power of the patient is endeavoring to correct the pathology present.

Why try to make a patient sleep with some hypnotic when strychnia is being given, when the omission of the evening dose of strychnia may be sufficient? Why continue to push alcohol, a vasodilator, when the patient is failing from peripheral collapse? Why impede the activity of the phagocytes with large doses of quinin in infections that normally produce leucocytosis? Now, let us return to the finer details of the blood in the different conditions.

1. *Plasma.*—This can be either increased or diminished in amount. Briefly, the cause of the diminution

may be hemorrhage, profuse watery diarrhea from any cause, profuse sweating, as seen in the prostration from pilocarpin, or profuse diuresis, as seen in diabetes. It may be relatively diminished in amount in conditions of shock and collapse, where there is a vasomotor paralysis, and may be relatively diminished in conditions of chronic vasodilatation, as occurs in Graves' thyroid disease, where there is too much secretion of vaso-dilating stuff, and in Addison's disease, where there is probably diminished secretion of vasocontracting stuff.

The symptoms of acute hemorrhage we well recognize, but perhaps we do not consider that the symptoms of the diminished amount of plasma from all these causes will always be the same, viz., low blood pressure due to imperfect filling of the vessels; poor heart action, it becoming rapid and irritable, due to the imperfect filling of its cavities, and from the diminished pressure, imperfect nutrition through its coronary arteries; thirst due to the demand for more fluid to fill up the blood vessels; more or less dyspnea due to the impaired circulation; cerebral excitement perhaps soon followed by sleepiness due to anemia of the brain. The skin is moist and cool when the plasma is rapidly diminished, but it may become dry and harsh and even shriveled in chronic loss of plasma, as in diabetes.

In any of the acute conditions in which this diminished amount of plasma occurs the indications for treatment are always the same, viz., to stop further loss, to transfuse in serious conditions, in any method which seems best, the normal saline solution. In less serious conditions to give plenty of warm, non-irritant fluids either by the stomach or perhaps better by the large intestine, and then to contract the peripheral vessels and thus relatively increase the amount of plasma either by strychnin, atropin, or digitalin hypodermically as we should not forget that in these conditions of diminished blood pressure the stomach does not absorb drugs with readiness, if at all. I reiterate that whatever be the cause, or whatever be the condition treated, or whatever be the acute or chronic, inflammatory or organic process, if this condition of diminished plasma occurs, these symptoms will develop, and the treatment is that of the condition of diminished plasma plus whatever treatment the causative disease calls for.

The plasma is increased in amount in conditions of simple plethora where there is diminished excretion as in uremia, and relatively in chronically contracted blood vessels, as in arteriosclerosis and gout. The symptoms are high tension; flushed face; more or less dyspnea due to congested pulmonary circulation; slow heart, due to the increased peripheral resistance; digestive disturbances, due to a congested portal circulation, which predisposes to the formation of biliary calculi.

When for any reason we have diminished excretion or a contracted state of the blood vessels, these symptoms will supervene, and whatever the treatment is for the condition causing it, we must also treat this increased amount of plasma by increasing elimination, dilating the peripheral blood vessels, and diminishing the ingestion of food.

Very probably the plasma has its specific gravity diminished in anemia and in impaired alimentary absorption, giving the tendency to hemorrhages and to edemas. We already treat this condition sensibly by increasing the excretion from the bowels by proper laxatives, correcting any alimentary disturbance that is present, and contracting the blood vessels with digitalis.

The specific gravity of the plasma is probably increased in gout; hence the tendency to urate deposits in the joints and other parts of the body, and the tendency to the formation of urinary calculi. The treatment of this condition is a modification of the food ingested, with the intake of large quantities of water medicated in any way that may seem best, and the adoption of any measures that promote the peripheral circulation, dilate the vessels generally and prevent them from being so permanently contracted that they will not absorb more water and thus dilute the plasma.

2. *Red Blood Corpuscles.*—These are perhaps never increased sufficiently to cause comment. They may be normal in number, but useless for oxygen exchange after certain poisons have been received into the system, such as potassium chlorate, carbonic oxid gas, and perhaps in chronic malarial poisoning. In this condition the corpuscles so affected are useless to the metabolism. Any method that will hasten their discharge from the system and encourage the formation of new corpuscles, would be good treatment. Hence in certain cases, perhaps, it is advisable to do venesection and then infuse salt solution.

Our greatest interest in red corpuscles, of course, lies in their diminution. They are diminished, and our patient is anemic, as we call it, in the various anemias, chlorosis in chronic impairment of any function, and in acute disease, especially in acute infections. We can have an acute loss of red blood corpuscles, of course, from hemorrhage, but I wish to emphasize the fact of the acute loss in malignant infections, which cases dying suddenly with symptoms of acute anemia I have termed *medical shock*. The treatment of chlorosis due to impaired alimentary chemistry, and of essential anemia due to the migration of the colon bacillus, according to Adami, it is unnecessary to discuss, but I do not think we are careful enough to give treatment to promote the formation of red blood corpuscles during acute feverish processes, especially when due to infection.

We have long recognized the advantage in diphtheria of giving iron, and it has been lauded in erysipelas, but I wish to state my belief that every case of typhoid fever will do better with the tincture of the chlorid of iron than without it.

Whether or not the blood corpuscles are themselves occasionally attacked by germs other than malarial as seems to occur in malignant infections, any fever that is prolonged any length of time, by interfering with nutrition, will impair the output of red blood corpuscles, and our patients will weather these acute conditions better, come out of them less prostrated, have less anemia, and shorter convalescence by giving the tincture of the chlorid of iron during the acute process. We not only furnish a stimulant to the blood-forming organs perhaps, but we add hydrochloric acid to the stomach when the amount is normally diminished.

3. *White Corpuscles.*—These perhaps are never diminished except relatively at such times as perhaps when a normal leucocytosis should be present. When they are chronically increased in number, we have the condition of leukemia, which condition, though at first functional, we as yet are utterly unable to stay. We have not yet discovered drugs or any treatment that will diminish the secretion of an internal gland, or will stop the output of white blood corpuscles.

The white corpuscles are increased daily, physiologically, as previously stated, for phagocytic work in infections of all kinds. The infections that typically cause a large amount of leucocytosis are those which

cause associated glandular swellings. These are typically diphtheria, erysipelas, scarlet fever, and septicemia. We also find some leucocytosis in rheumatic fever, cerebrospinal meningitis, and occasionally in typhoid fever. In acute tuberculosis and in chronic tuberculosis, leucocytosis does not occur unless there are some dammed-up pus formations. In pneumonia the leucocytosis may reach an excessive amount, disappearing gradually after the crisis, and the prognosis is often based upon the amount of leucocytosis.

These leucocytes must be like the armies of a nation, there being a standing army for police duty, and perhaps there is always military law for all invading bacteria, but in rapid attacks of virulent bacteria a reserve army can be called out or produced, and perhaps, if necessary, there is also a second reserve.

Bacteriological study having showed this leucocytosis in infections to be protective, is it perhaps not our duty in such conditions to promote this condition? Hence, perhaps the nucleins or thymus gland preparations should be given in all acute infections, as diphtheria, scarlet fever, typhoid fever, pneumonia, and perhaps tuberculosis.

In the period of convalescence from any acute disease we find a condition of vasomotor ataxia. The patients are hot when they ought to be cold, cold when they ought to be hot, sleepy when they should be awake, awake when they should be asleep. The least indiscretion of food causes internal disturbance and congestions, the same lack of blood-vessel tone is perhaps the cause of the obstinate constipation, not enough fluid being excreted into the intestine or too much of the fluid in the intestine being absorbed. The least cerebral excitement causes a rise of fever, showing that the vasomotor regulation of heat loss and heat production is badly managed, in other words, a vasomotor ataxia exists. Anything that educates the peripheral vessels to again react normally, such as massage, electricity, gentle exercise, sponging, and baths will improve all of these conditions which, though multiple in manifestations, are due to but a single cause, i. e., vasomotor ataxia.

I fear this paper will be considered erratic, but perhaps it will stimulate more consideration of the general condition of our patients while we are scientifically treating the etiology and pathology of the disease present.

TREATMENT OF NEURASTHENIA.*

HAROLD N. MOYER, M.D.

CHICAGO.

In inviting your attention to a brief consideration of the treatment of this disease, I do not hope to present anything especially new, with the possible exception of the application of prolonged cold, the marked beneficial effects of which I have noted in two patients.

Everything in the treatment of neurasthenia depends upon the diagnosis. In too many instances the conception of neurasthenia in the physician's mind is very like that which obtains in hysteria, namely, that it is a term which is to be applied to any anomalous symptom for which there is no other explanation. Again, many practitioners do not clearly differentiate between hysteria, neurasthenia and hypochondria, grouping them all together under the first or second of these terms. To be sure, they all belong to the functional nervous group, but the treatment of these different conditions varies greatly, and the successful handling of an individual case depends largely upon the fundamental distinctions in these three conditions. Rest, which is imperatively indicated in neurasthenia, is certainly disadvantageous in many of the milder forms of hysteria. In hypochondria we are dealing with a pure psychosis, in which the patient has delusions, or imperfect conceptions regarding his health. The treatment for the most part that would be applicable in neurasthenia and hysteria is not appropriate for an hypochondriac.

To my mind, the central point in the diagnosis of neurasthenia is the presence of the fatigue symptom; without this I can not understand a diagnosis of neurasthenia. The fatigue symptom is difficult of definition. It consists essentially of fatigue upon exertion, which ordinarily, in a well person, would cause no such sensation. This may vary from a condition so severe that even two or three movements of the arms, such as bringing them up to the head, will cause such extreme fatigue as to incapacitate the patient for making another movement with the upper extremities, to such a slight decrease in the capacity for exertion as to be scarcely noticeable. It would be as improper to make a diagnosis of neurasthenia without this fatigue symptom as it would be to speak of a case of chorea without the characteristic disorderly movements.

The portion of the body in which the patient experiences the greatest amount of fatigue has given rise to special division of neurasthenia, such as spinal, sexual, psychical, etc. Such divisions are quite useless, as a close analysis in most cases will reveal the general character of the symptoms, a certain few of them only being accentuated by the patient. The latter's subjective statements ought not to furnish a basis for classification. The fatigue symptom may involve the sensory side of the nervous system as well as the motor; a certain mental incapacity is usually complained of, in some very markedly, so that they will come to consult you to learn whether they are becoming insane. A very common statement among these patients is that they are suffering from failing memory. A very brief conversation with them develops the fact that they have mistaken a failure of attention for a failure of memory. They will read something, and an hour afterward will recall the fact of the reading, and, to their surprise, they are not able to recollect the subject matter. They at once jump to the conclusion that this is loss of memory, while in fact there was merely a want of attention while they were reading. This is startlingly impressed upon their minds, and many of them can distinctly recall a number of instances of that kind extending over weeks. A graphic description of this mental state is to say that such patients "remember that they have forgotten." It is evident that this is very different from the true loss of memory, such as we have in the organic affections of the brain.

Another distinguishing symptom in neurasthenia is that the pains which are spoken of as such by the patient are in reality a sense of distress or discomfort—sometimes graphically spoken of as a misery, rather than a pain. In part, they are the outgrowth of the fatigue symptom, especially the pains in the back, which are due to the extraordinary use to which the back muscles are put in maintaining the upright position.

Neurasthenia is to be distinguished from hysteria by the absence of anesthesia, a failure of the inversion of the color perception of the retina and a want of the pe-

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culiar psychical manifestations of hysteria. There is some similarity in the morbid introspection of neurasthenia and hysteria, but, as a rule, the peculiar characteristics of hysteria are readily distinguished from those of neurasthenia. In hypochondria the purely delusive character of the malady is easily differentiated from the underlying nerve weakness which is characteristic in neurasthenia. The neurasthenic always has a tendency to exaggerate his symptoms, but they are not cut out of the whole cloth as they are in hypochondria.

The term "essential neurasthenia" has been employed to distinguish the primary form of the disease, and that is the sort of neurasthenia of which we shall speak in our remarks upon treatment. Every case of convalescence from an infectious disease is really one of mild neurasthenia, and many of the symptoms which attend constitutional diseases and the chronic infections, such as tuberculosis, are clearly neurasthenic in character. I do not call such cases neurasthenia; hence, the diagnosis depends upon the exclusion of underlying constitutional states—anemia, chlorosis, tuberculosis, inflammations of the gastro-intestinal tract, etc. If such cases are rigidly excluded, it will be found that the number of primary neurasthenias is comparatively small; but we must still recognize that such a primary weakness of the nervous system is possible without coexisting involvement of other organs, and in which the alteration in nutrition, which is almost always found in well-marked cases of neurasthenia, is secondary to the nervous involvement.

This close distinction between secondary and primary neurasthenia is vital from the standpoint of treatment. In the presence of an adequate cause, if that be not removed recovery will not take place.

Another variety of neurasthenia is the congenital form, to which the term neuropathy has been given. These patients are, so to speak, born tired, there being a congenital deficiency in the protoplasmic activity of the nerve cells. But little can be done with the congenital form of neurasthenia. It seems to be dependent upon a biochemic deficiency for which treatment will do nothing.

In the treatment of neurasthenia, therefore, we would refer to only two varieties: those in which the disease is acquired and those which are primary. The underlying defect is in all cases a nutritional disturbance. Many would refer these cases to uric acid diathesis, whatever may be meant by such a term. I have long since abandoned a treatment of functional troubles based upon a uricacidemia. I am confident that I can not recognize such a condition, and a treatment based upon such theoretical consideration has proven most fallacious in my hands. In those cases in which it was successful, the effect of the treatment could as well have been explained upon some other theory as that of an excess of uric acid in the blood.

At the beginning of the treatment of a case of neurasthenia, the most important thing is to obtain the full confidence of the patient. He should be told frankly that his condition is curable, and that his recovery depends largely upon himself; unless he will put himself absolutely under the direction of the physician for a period of from three to six months, it is better not to undertake the treatment of the case. If the patient will agree to a careful regulation of his habits and diet, then you may enter on the treatment with some hope of success. The simple diagnosis made in the office, followed by a prescription, without further directions to the patient, simply results in his drifting from physician to physician, without obtaining the slightest relief. The disease finally becomes chronic and fixed, or else there is that natural amelioration which usually takes place. In most of the acquired forms of neurasthenia, the clinical history shows a gradual invasion of the malady marked by an increase in the fatigue symptoms, which deepen for a period of months, sometimes approaching a year, and, at the end of that time, there is a gradual change for the better; hence, neurasthenia can be generally spoken of as a self-limited disease, having a natural tendency toward recovery even without treatment.

Next to obtaining the full control of these patients, it is of the utmost importance that persistent suggestion be employed—not hypnosis. The patient should be instructed to avoid, under all circumstances, talking over his ailments with any one excepting his physician. If he is asked about his health, he is to be instructed to make some indifferent reply, or to state that he is better. Under no circumstances is he to be allowed to discuss with any one of his symptoms, treatment or subjective state. This regulation relieves him somewhat from counter suggestions. The physician should then undertake a careful regulation of the life of the patient, making him keep a record of his sleep, food, appetite, bowel movements, baths and exercise. This should be looked over carefully by the physician twice, or at least once a week, and such corrections or additional directions given, as may be needed.

Rest is the sheet anchor in the treatment of neurasthenia. In the more severe cases we should employ the rest cure of Weir Mitchell; but we should remember that there are many hysterics and neuropaths who do very poorly, or, indeed, may be harmed by the rest treatment, even in a modified form. Neurasthenics, however, are all benefited by rest. In only severe cases, in which there is a profound disturbance of nutrition, should complete rest be employed, and, oddly, it is found to be more efficient with women than with men. As a rule, neurasthenia in men rarely requires the full rest treatment, but what I have elsewhere spoken of as a modified rest treatment may be employed with great advantage.

My patients are required to remain in bed many hours more than they have been in the habit of doing; they are directed to remain in bed until noon, and their hours at the office are sometimes restricted to two each day providing they can not avoid some direction of their business. As a rule, the rest which is prescribed is to be taken in a recumbent position. Frequently it is best that one of these patients should be enjoying some light exercise, preferably associated with mental diversion, or else be flat upon their backs. Either one of these is better than that the patient should spend his time moping around, as so many of them do.

In this connection I can not speak too highly of the value of golf in improving the nutrition of neurasthenics. It seems to furnish just the amount of exercise which they need, and, above all, it is taken in the open air. This improves the appetite, and the amount of exertion may be so carefully increased that there is never any strain upon the patient, and, as his nutrition improves, he gradually acquires an increased capacity for exertion. Any exercise that is ordered for the neurasthenic should always fall short of causing fatigue, no matter how slight the exertion may be.

Associated with the rest, the patient should be placed on a modified diet, which should invariably in neurasthenia without complications be a mixed one. Idiosyncrasies in the matter of diet are very common in neuras-

thenics, and should be carefully considered. Milk and eggs, where they are digested, will be found of special value. If milk does not agree with the patient, uusually mixtures of cream and water, or cream, water and milk, will be easily digested. As a rule, neurasthenics take too little water, so that they should be directed to take a glass of water at certain hours in the day; this will tend to relieve constipation. It is a singular thing that most neurasthenics have no proper sense of thirst.

Drugs, as a rule, are of little value in the treatment of neurasthenia. The judicious administration of strychnia is of some value. The patient feels the stimulating effect of the treatment, which produces a sense of well-being, and this produces a favorable mental state, so that its liberal administration in the first few weeks of the treatment is often useful. If it is given, it should be employed in large doses; a twentieth, or fifteenth, or even a twelfth of a grain is well borne by many of these patients. A few of them, however, can not take strychnia at all. Cannabis indica is a drug which is also of some value in producing a sense of comfort and well-being in the patient. It should not be continued for any length of time, and it, like strychnia, is probably dependent for its good action upon the effect which it has upon the mind of the patient. In cases of extreme agitation and failure to sleep, a few large doses of the bromids may be useful at the outset of the treatment.

Hydrotherapy in some form is exceedingly valuable, the most important being the application of a sheet wrung out of cold water each morning as the patient gets out of bed. If this is done promptly, and the patient vigorously rubbed after the application, producing a quick reaction, the benefit is very marked.

In two of my patients, during the past winter, I have had them exposed to an outdoor temperature for several hours at a time, following, in this, somewhat the plan that is now employed in the outdoor treatment of tuberculosis. In one case this was a modification introduced in the course of an ordinary rest cure, and I was astonished at the beneficial results. There was an immediate improvement in the appetite, the patient slept better, and the general effect on the nutrition was very pronounced. This exposure to cold was brought about by raising the windows, turning all the heat off in the room and carefully protecting the patient by heavy blankets and hot water bags in the bed. Another patient spent most of her time in the house and was under a modified rest cure. This patient was put on an open veranda, carefully protected from the weather. On several days the thermometer registered near the zero mark. The colder the days the greater was the benefit. This innovation in the ordinary rest cure treatment I believe to be of great value, but, of course, it is only applicable during the winter season.

Treatment of Sinusitis by Hydrotherapy.—Zangger states in a communication to the *Corr. Blatt.* of August 15, that acute catarrh of the frontal sinus, rebellious to medicinal measures, has been invariably relieved and cured in his experience by an energetic sweat bath. The profuse perspiration induced is followed by increased absorption on the part of the tissues and the catarrhal condition in the sinus is improved. He thinks that the same measure might be applicable in case of suppuration, and would apply it before resorting to surgical intervention. The sweat bath is repeated every other day for two to five times, as indicated by the symptoms. He has also obtained excellent results from it in pleuritis and tubercular adenitis.

A SIMPLE OPERATION FOR THE RADICAL TREATMENT OF HEMORRHOIDS.*

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Hemorrhoids are usually described as bluish-red vascular tumors occurring in the thickened mucous membrane of the anus. They are generally considered to be varicose dilatations of the hemorrhoidal vessels, brought about by obstruction to the blood current and by chronic inflammatory processes. According to the investigations of Reinbach,[1] however, a hemorrhoid is a true angioma, whose development, which may begin in early childhood, depends on a new formation and cavernous metamorphosis of the blood vessels, and may be quite independent of any obstruction to the blood flow.

As the pathology of hemorrhoids seems to be a more or less disputed question, and, since there is such a great variety of methods advocated for their treatment, which is probably due, in part at least, to the various conceptions of their pathology, I submitted to Dr. W. A. Evans specimens of these tumors for histologic and pathologic examination, hoping thereby to arrive at some definite

Fig. 1.—Photo-micrograph of hemorrhoid under low power, showing enlarged blood vessels and blood lakes.

conclusion as to the best means of treating this ailment. His report, together with the clinical observations which I had made, confirm, in a great measure, the pathology of this affliction as observed by Reinbach (Figs. 1 and 2). Hence, it seems that we should adopt or devise some method of operative procedure whereby we can remove the diseased structure—the angioma—and at the same time facilitate the reconstruction of the crippled mucosa and submucosa. That method is surely not to be found in the ligature, clamp and cautery, Whitehead's or many other operations I might mention.

In fact, it seems to me that it would be a physical impossibility to do a radical operation on a well-defined case of internal hemorrhoids by either the ligature or clamp and cautery, and, at the same time, preserve the contour of the anus. Furthermore, I should think that the same criticisms might be easily sustained with reference to the Whitehead operation, and also the method

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1. Ziegler's Pathology, p. 323.

of excision as practiced by Allingham, as well as those methods of suturing where the hemorrhoid is seized with a pair of forceps, its apex cut off and the edges sewed together, as in Earl's operation. This procedure embodies the same principles and therefore is subject to the same criticism as that of the ligature or clamp and cautery method. Marcy's operation, where the hemorrhoidal mass is dissected, tied and cut off and the edges of the mucous membrane brought together with suture, is, from a theoretical standpoint, ideal, but its objections are: 1, the danger of suture infection; 2, painful swelling, and 3, hemorrhage and the formation of a blood clot at the site of the original hemorrhoid. Only recently a medical friend of mine came near losing his life from suture infection following this operation, and a few days ago one of our leading surgeons, Dr. Carl Beck, recited to me a case in which his patient had much edema and painful swelling following this method. Similar criticisms might be submitted with reference to the submucous ligation as practiced by Ricketts.

Consequently, after carefully studying all of the above methods and many more, it occurred to me that the most rational way of treating this condition would be by everting the pile-bearing area and removing an ellipse

Fig. 2.—Photo-micrograph of hemorrhoid under higher power, showing blood lakes separated by thin wall of fibrous tissue and endothelial lining of blood vessels, only.

from the apex of each tumor commensurate with its size, then dissecting out the angioma, when the remaining walls of the tumor would collapse and, if the ellipse had been carefully and intelligently removed, would practically cover the denuded surface when the bowel was in a passive state. This gave rise to the origin of the method presently to be described, which seems to me the most rational of all methods for the radical treatment of this malady.

Given, for the purpose of illustration, a case of well-defined internal and external hemorrhoids. The second night before the operation administer from 2 to 5 grains of calomel in broken doses, in combination with subnitrate of bismuth and pepsin. The following morning give one-half ounce of Rochelle or Epsom salts. At 9 o'clock the night before the operation shave the anus and give a bath and a colonic flushing. At 7 o'clock the following morning give an enema of from one-half to one pint of cool water and operate two hours later. This method of preparation gives a clean field in which to operate.

The patient, being anesthetized with either a local or general anesthetic, is held upon the operating table in the lithotomy posture by means of a Clover crutch. The sphincter is then gently and carefully divulsed with the fingers, and the rectum irrigated with an antiseptic solution, usually bichlorid of mercury 1 to 3000, followed by normal salt solution. Each anal quadrant is now grasped at the muco-cutaneous junction with a pair of T forceps (Fig. 3). These are held by an assistant. By means of these instruments the anus is everted and the internal tumors exposed (Fig. 4). Now seizing

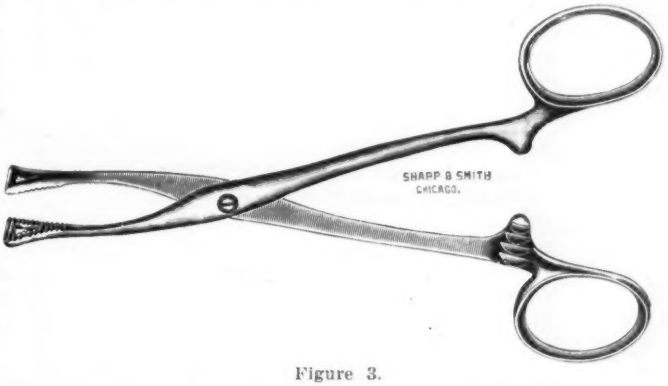

Figure 3.

with the full hand the forceps attached to the posterior quadrant, fully evert it, and with a pair of scissors sharply curved on the flat (Fig. 5) remove an ellipse from the apex of the hemorrhoid commensurate with the size of the tumor. This permits most of the blood in the tumor to escape. All of the angimatous tissue is now carefully removed, when the remaining wall collapses. This leaves a very small area, if any, of denuded surface (Fig. 6). Each quadrant in regular order is

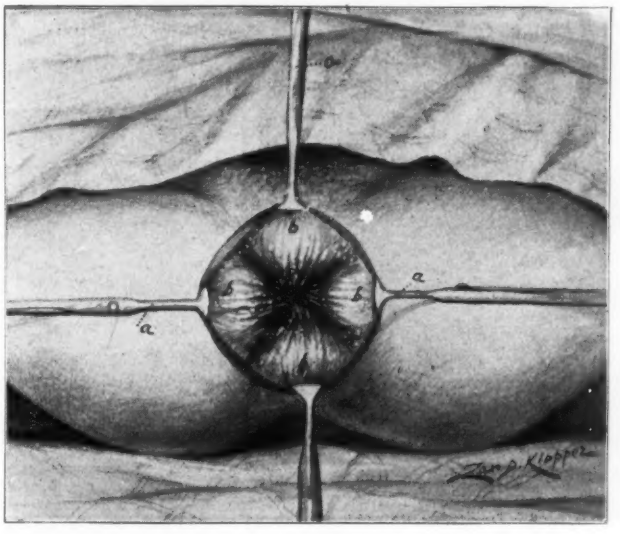

Fig. 4.—Diagrammatic: illustrating the application of the T forceps (*a*), to the muco-cutaneous junction and the exposure of the hemorrhoids (*b*).

treated in like manner. A stream of hot sterilized saline solution—115 to 125 F.—flows over the field continuously during the operation. Any spurting vessels are caught with a pair of forceps and thoroughly twisted. Should this fail to control the hemorrhage, throw a ligature around the vessel and ligate it; so far I have not found this necessary.

The T forceps are then removed and all external tumors and tabs of skin cut off with a pair of straight scissors, care being taken not to make an incision in the

muco-cutaneous junction, when it can be avoided, as this is the most sensitive point around the anus. This same precaution should also be observed when removing the internal tumors. The field is then dusted with some antiseptic powder and a rubber-covered tampon introduced through a bivalve speculum.

The tampon is allowed to protrude about 1.5 inches beyond the anal orifice. Gauze is carefully wrapped around the protruding portion and packed close to the anus. The anchoring string of the tampon is wrapped around a piece of gauze held close to one side of the tube, and woven in with the other dressings, so as to prevent the tampon's slipping into or out of the rectum. Over this is placed gauze, cotton and a T bandage which is made quite taut. The patient is then placed in bed.

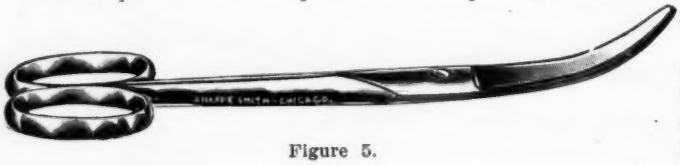

Figure 5.

By operating in this manner there are no tender and obstructive stumps to slough, nor nerves caught and squeezed, producing most excruciating pain, as there are when the ligature method is used; neither are the nerves and tissues painfully burned, as when the clamp and cautery are employed. In lieu of this, a fibrinous exudate is deposited over the operated field, which exudate is neither destroyed nor disturbed upon removal of the dressings. Moreover, the danger of stricture is obviated, as the normal caliber of the bowel is left practically covered with mucous membrane. Neither is the anal orifice contracted, as it necessarily is after either of the above operations.

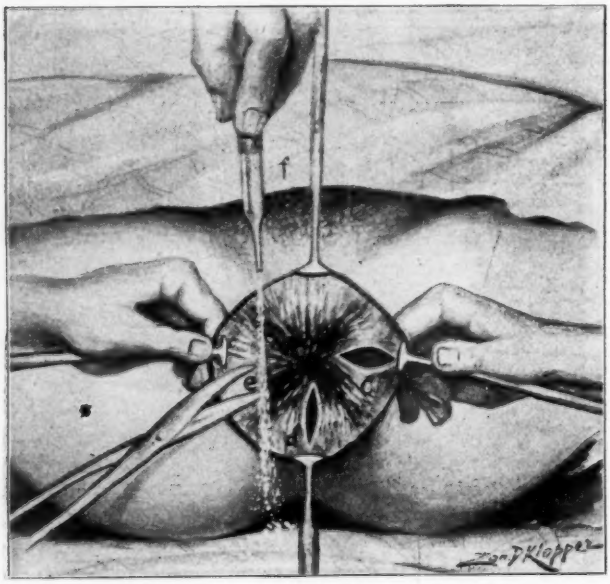

Fig. 6.—Diagrammatic: illustrating method of operating. (*e*) Shows the removal of an ellipse from the apex of the hemorrhoid; (*f*) hot saline solution flowing over the field of operation.

At the end of forty-eight hours the patient is given a cathartic and the tampon removed. Removing it is easy and painless. The movement of the bowels is also painless, and there is, as a rule, little or no bleeding.

From this time on until convalescence is well established, the parts should be washed or irrigated twice a day with an antiseptic solution, and dusted with some antiseptic powder. After the bowels have moved, the patient is instructed to keep them soft for two or three weeks. For this purpose Apenta water is very palatable and effective. Should the patient complain of pain or an aching sensation, a hot sitz bath of twenty minutes' duration is given. As a detergent, small pieces of wet cotton or cottonoid are used. Paper and other hard and rough substances are interdicted.

I prefer the rubber dressing to the gauze and other porous materials because: 1. It is neater. 2. Its removal is painless. 3. As the tender granulation sprouts can not penetrate it, as they do the gauze and other porous dressings, they are not broken off during its removal, neither is the fibrinous exudate disturbed. Hence, the healing process is greatly enhanced. 4. Another advantage, and one of no little moment, is that there is but little or no pain during the first and subsequent movement of the bowels.

This method of procedure, which I have now employed in 138 cases, in 29 of which local anesthesia was used, has been by far more satisfactory than any method previously used. It is very quickly and easily performed. Patients suffer little or no pain, and they are out of bed in a week and often in less time.

As evidence of the advantages of this method of operating over that of any other of which I have knowledge, I will briefly append a few cases.

CASE 1.—Dr. P. had large internal and interno-external hemorrhoids. I operated on him Wednesday, February 19, at the Chicago Hospital. The following Wednesday he came into my office and was examined by Dr. J. M. Mathews, of Louisville, Ky., who spoke very flatteringly of the result. On this day, which was just one week after the operation, besides attending to his regular practice he walked five miles.

CASE 2.—Dr. G., of Montana. I operated on him for large internal hemorrhoids at the Chicago Policlinic Hospital, on Wednesday, March 11. On the following Monday he resumed his work at the Policlinic and on Wednesday, just one week after the operation, he assisted me in operating on Dr. R.'s wife for the same trouble.

CASE 3.—Mrs. R. She is the patient referred to in Case 2. I operated on her March 18, and she was up on the fifth day attending to her household duties.

CASE 4.—Col. H., of Pittsburg. Very large external and internal hemorrhoids. I operated on him at the Passavant Memorial Hospital on March 4. Two of the internal tumors were so large that I made two elliptical incisions in each. He left the hospital at the end of one week.

CASE 5.—Mrs. H. had been operated on for hemorrhoids three years ago by one of our leading surgeons with the ligature method. They returned. I operated on her on Monday, March 4. Her husband, who is a physician, removed the dressings at the end of 48 hours. I saw her on the following Friday, the fourth day after the operation, and she was up.

CASE 6.—Mrs. P., of Caldwell, Kansas, weighed 235 pounds. She had very large internal and small external hemorrhoids. I operated on her at the Passavant Memorial Hospital, March 25, Dr. D. H. Galloway administering the anesthetic. Only eight minutes were consumed in putting her to sleep and completing the operation. She left the hospital and returned home at the end of one week.

CASE 7.—Mr. L., of Canada. I operated on him at the Chicago Policlinic Hospital for internal hemorrhoids, March 27. He was up and left the hospital before the end of the week.

CASE 8.—Dr. C., of Galesburg, Ill., was operated on Friday, May 3, at the Chicago Policlinic Hospital. He was up on the following Tuesday, the fourth day after the operation, attending the clinics and went home before the end of the first week.

Were it necessary I could cite case after case fully demonstrating the advantages of this method of operating. The photo-micrographs were made by Dr. Carl Theodor Gramm, Chicago.

Columbus Memorial Building.

ANATOMICAL TREATMENT OF FRACTURES OF THE FEMORAL NECK.*

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In the Association JOURNAL of August 28, 1899, I published a report of 17 cases of intracapsular fracture of the neck of the femur treated according to the method advocated and practiced first by Prof. T. J. Maxwell thirty years ago. It is what I have seen fit to denominate the anatomical method, and is the only method, to my knowledge, that entirely neutralizes the displacing tendencies of muscular action and weight.

Of the 17 cases reported 5 recovered with no discoverable shortening whatever on careful and repeated measurements, 7 gave one-half to three-fourths inch shortening, 3 with one inch shortening, and 2 cases with useless flail-like limbs in which the treatment was abandoned after a few days of trial for lack of co-operation on the part of patient and friends. One death occurred from complications after union had been secured.

Fig. 1.—Muscle pushing itself or other soft parts between the fragments.

Fourteen cases, ranging in age from 25 to 86 years, have obtained union with useful limbs, in no case exceeding one inch of shortening. Union was therefore secured without perceptible shortening in 35 per cent. of cases in which the treatment was continued with anything like regularity.

Slight eversion of the foot was noticed in one case, owing to the lateral pull being too slight and directed too nearly straight outward, instead of the heavy incline upward sufficient to control the tendency to eversion. In two cases of negative results in which treatment was abandoned after a few days, we have the usual outcome of non-treatment, while the amount of shortening obtained in the other cases is much less than the average of those treated by simple extension or other device.

Case 17 was 60 years of age, and so feeble that but little hope was entertained of saving her life; yet she recovered without shortening, and now walks without crutch or cane, without limp or halt. I am convinced that in my earlier cases I could have secured union with less shortening had I known better how much weight was required to overcome muscular action and weight displacement.

The notoriously bad results following fractures of the femoral neck makes apology for this paper unnecessary.

The following cases I wish to report and offer as additional evidence:

CASE 18.—Dr. D., aged 28, was thrown 15 feet from a cart in August, 1894, and sustained a fracture of the right femoral neck. Shortening existed of two inches with eversion and external rotation, treated with extension, counter and lateral extension four weeks. Result, union with one-half inch shortening. Walks without limp in any manner perceptible. Physician, C. A. Runyon, Elvaston, Ill.

CASE 19.—Mrs. Nancy M., aged 68 years, in 1892 sustained a fracture of the left femoral neck. No union was obtained. Two inches of shortening exists with a useless limb, treated by the old sand-bag method, and eight pounds of extension. In November, 1899, she fell and fractured the right femoral neck. Two and a half inch shortening was found on examination. She was treated by extension, counter and lateral extension, and recovered in six weeks with seven-eighths inch of shortening. Can bear weight on the limb and walk with crutches as well as before fracture of the right femur. The left leg still dangles, as it has for the past nine years. This patient would have been confined to the bed or chair the rest of her life had she been treated for the second fracture as she was for the first. Physician, C. A. Runyon, Elvaston, Ill.

Fig. 2.—Course and relations of psoas and iliacus to hip-joint, with thigh flexed at right angles to the trunk.

CASE 20.—Mrs. F., aged 88, sustained intracapsular fracture of the left femoral neck in 1894, and was treated by Dr. H. A. Kinnaman and reported by me in my former paper as Case No. 11. She recovered with a useful limb with one-half inch shortening. She fell Jan. 11, 1900, and sustained a fracture of the right femoral neck. Treatment was not begun for ten days, but was by extension, counter and lateral extension. The treatment was intermittent, owing to the patient being

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intolerant of restraint. The result was union in four weeks with about one inch shortening. She died two months later of intercurrent malady, nature not determined. Physicians, Drs. Gray and C. E. Ruth.

CASE 21.—Tim H., aged 80 years, habits intemperate. Fractured the left femoral neck by a fall on the sidewalk, Nov. 27, 1899. Treated as above. Union was obtained in five weeks; position and motion perfect; shortening one-half inch. Examined and measured leg, April 25, 1900. January, 1901, still well with good use of leg. Physicians, R. H. Fegers and C. E. Ruth.

CASE 22.—Mrs. Obediah H., aged 70. Sustained a fracture of the right femoral neck from a fall in January, 1901. Eight days later I was called, and treatment was begun as in the above-mentioned cases. Union was obtained in four weeks without discoverable shortening.

CASE 23.—Boy 10 years old fell twenty feet and sustained a fracture of the femoral neck. Treatment as in the former cases, with scarcely demonstrable shortening. Union was secured in four weeks. Physician, A. Ives.

The above physician has had two other cases, 73 and 86 years of age, in which union was secured, but death resulted from exhaustion or complications, and as I have not the histories, can furnish no farther report of them.

CASE 24.—David B., aged 60 years, April 10, 1900, was thrown from an ore wagon in a runaway, and thrown down the mountain thirty or forty feet. Examination under chloroform revealed fracture of the femoral neck. Treatment as in the former cases for six weeks. Union was obtained with one-half inch of shortening. He has for several months been driving the ore wagon, and walks with very little limp. Occasionally complains of some pain in the hip in bad weather. Physician, C. M. Tinsman, Adin, Cal.

CASE 25.—Mrs. Elizabeth F., aged 86, sustained fracture of the right femoral neck in January, 1900, with shortening, eversion and backward displacement of the trochanter major. Treated by Buck's counter and lateral extension. Union was obtained with no perceptible shortening. The fractured leg gives as good service as before the injury. Physician, Dr. F. A. S. Rebo, Alexandria, Mo., assisted by Dr. W. A. Rebo, of Canton, Mo.

The first indication in the treatment of all fractures is correct adjustment; second, immobilization; third, overcoming muscular action which would tend to disturb the normal relations. We should be careful to eliminate all our own errors before blaming Nature with our unsatisfactory results. In these cases there is no muscular effort or influence acting on the upper fragment. The position of the lower fragment will depend upon the position of the patient, the kind of retaining force, and his own muscularity; for muscular action is of more importance in determining results of fracture here than anywhere else in the body. This is due to the great number of powerful muscles passing over the fracture line to be inserted somewhere beyond, and which must exert a powerful displacing force.

The position, at least for a time, that must be taken by these cases is upon the back, and the displacement is known to be upward, backward and outward rotation, with all the internal displacement of the lower fragment which the muscular tissues will permit.

The pronounced tendency to eversion and external rotation is increased greatly by the external rotary power of the psoas and iliacus, which was neutral or else an internal rotator now must be a pronounced external rotator, because the insertion into the back and internal portion of the upper end of the femoral shaft and lesser trochanter throws the line of action internal to the point of resistance, whereas it was formerly external. The result is that we have the following muscles acting to produce the following results:

Those pulling nearly directly upward and tending to shorten the limb by over-riding the fragments, are the sartorius, rectus, gracilis, semi-tendinosus, semi-membranosus, long head of the biceps, vertical portion of the abductor magnus.

Those pulling very strongly inward as well as upward are the adductor magnus, except vertical portion; adductor longus, adductor brevis, pectineous, gluteus maximus, gluteus medius and gluteus minimus.

Those which pull almost directly inward and rotate outward are the pyriformis, obturator intermus, gemellus, superior and inferior, obturator externus, quadratus femoris, lower half of gluteus maximus.

Those which pull inward, upward and rotate inward, are the tensor vaginæ femoris and the anterior portions of the gluteus medius and minimus.

Fig. 3.—Fracture of neck of femur in Case 2. At 72 years of age, used 20 years afterwards. No perceptible shortening. Physician, Prof. T. J. Maxwell, Keokuk, Iowa.

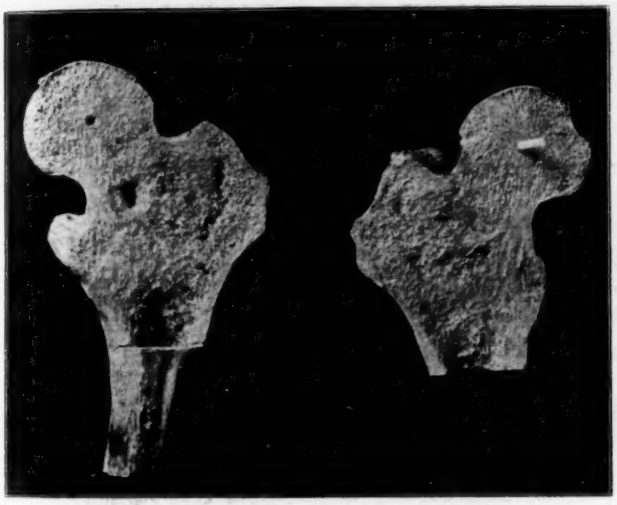
Those formerly internal rotators exerting a strong upward pull and now external rotators, often drawn directly between the fragments, and absolutely preventing approximation of the bony parts, psoas and iliacus (Fig. 1).

It will thus be seen that the external rotary force greatly predominates over the internal because of the conversion of internal rotary force of the psoas and the iliacus to external, besides the power of the limb's weight to accomplish the same ends. Lastly, we have the important displacing force weight tending to carry the upper end of the lower fragment behind the line it should occupy because its old attachment support is gone. Posterior displacement and external rotation are only limited by the Y ligament.

Adjustment of the fragments is best accomplished by flexing the thigh upon the abdomen to relax the psoas

and the iliacus, bringing them above the fracture line, thereby preventing them from being permanently caught between the fragments (Fig. 2).

This position also relaxes nearly all the external rotators or changes them into abductors; then make vertical traction on the shaft of the femur, which now stands at right angles to the trunk, while moderate evasion is being maintained; next abduct to the normal line and make extension in the long axis of the trunk, while an assistant makes traction one-half to two-thirds as strong outward, slightly upward and forward from the upper end of the femoral shaft. These manipulations should be made by firm, steady traction, not by jerks, which is to become continuous by Buck's extension with a weight of from ten to twenty pounds, according to the muscularity of the patient, with elevation of the foot of the bed enough to counteract the tendency of the patient to slide down to the foot. This means an elevation of from six to fifteen inches. A binder's board, or other splint material, should now be molded to the upper inner aspect of the thigh, over which a band of adhesive plaster four to six inches wide should pass outward, upward and sufficiently forward that the weight over the pulley



Figs. 4 and 5.—Vertical section of femoral neck fractured 20 years before. Case 2 of former report.

shall overcome the internal pull of all the rotators and adductors, and at the same time raise the lower fragment to its normal level and maintain it there. It must entirely overcome the tendency to external rotation.

The weight on this lateral pulley will be from five to fifteen pounds, according to requirements. The side of the bed corresponding to the injured side of the patient must be raised enough to prevent the individual from being drawn out of position toward the lateral pulley. Patients so treated will have absolutely no pain whatever after spasmodic muscular action is entirely overcome.

The claim has been persistently made that bony union can not be expected. In Case No. 2, treated by Dr. T. J. Maxwell in 1881, bony union was secured, as proven by postmortem specimen which I now present you (Figs. 3, 4, 5). This patient was 72 years of age when he sustained the fracture. He made a good recovery without perceptible shortening, and had good use of his leg for twenty years.

The specimen shows the line of union very distinctly. There was slight eversion, but not sufficient to cause the patient any marked annoyance. This case is sufficient to forever settle the question of Nature's ability to repair these injuries if given a chance.

The figures I herewith present will show the actions of the psoas and iliacus muscles in fractures of the femoral neck; and as some might question the correctness of the photographs, I will illustrate by models to which I have attached artificial muscles (Figs. 1, 2 and 6).

The only essential illustration difference between the action in life and on the model, however, is the anterior portion of the capsular ligament will probably be intact to its lower border and prevent the muscular tissue from falling between the fragments; but muscular action tends to force the capsule in such cases between

Fig. 6.—Shows normal position, relation and line of action of years before. Case 2 of former report.

the fragments, and thus interfere with union quite as much as though the muscular tissue itself occupied the space.

We do not come to you with a single case in the hands of a man of slight experience, but with 25 cases of unquestioned fracture of the femoral neck in the hands mostly of men of large experience. In 22 of these cases union was obtained; useful limbs were secured in persons ranging in age from 10 years to almost the extreme limits of old age, and yet the shortening was no more than one inch in any; and after the most careful measurements no shortening whatever was discoverable in six of the cases.

In one of the cases reported with one-half inch shortening, the physician in charge informed me that he could find no shortening, and that the patient walked without a particle of halt; but one-half inch shortening was claimed in the prosecution of a suit brought against his employers for damages. This man fell thirty feet when the fracture was produced. In some of my own cases I am certain that I did not use heavy enough weights, and in others the treatment was interrupted occasionally by having the weight removed to satisfy some meddlesome attendant, nurse or the patient.

The only failures to secure union were in two cases that absolutely refused to have the treatment carried out. I might cite you many cases of flail-like limbs from this cause, as can be done by most physicians of any considerable practice. Where little or no shortening took place, and the limb was functionally perfect, there can be no doubt that the union was bony.

Whatever may be the opinions in regard to repair of this bone, results that are almost perfect, and make the patient comfortable while repair is taking place, are certainly worthy of our attention, endorsement and most earnest efforts to establish, even though most of the patients are advanced in years. The usefulness of this plan of treatment is not alone limited to fractures of the femoral neck, but is equally applicable to the treatment of hip-joint disease with or without operation in cases confined indoors.

In some of these cases treatment was not begun until several days after the injury, and in some the treatment was interrupted occasionally for a short time. In no case was pain complained of after the first day, if weights were enough to prevent muscular spasmodic disturbance of the fragments.

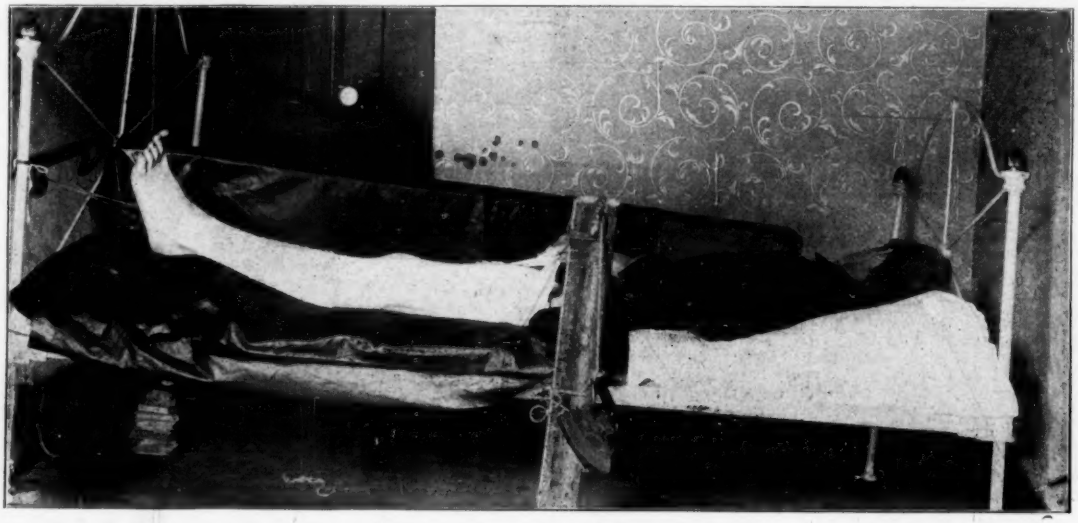


Fig. 7.—Showing Buck's extension and lateral extension. Foot of the bed raised; the side of the bed corresponding to the injured limb is also raised to overcome tendency to displacement towards the lateral pulley.

By this plan of treatment the patient can be raised, if needs be, to the sitting or semi-sitting posture for the purpose of cleansing. Some of these cases had bedsores, and were lying in their own excrement and suffering severely when the treatment was begun. These were raised daily to the sitting posture, cleansed and the sores healed during the use of the extension treatment.

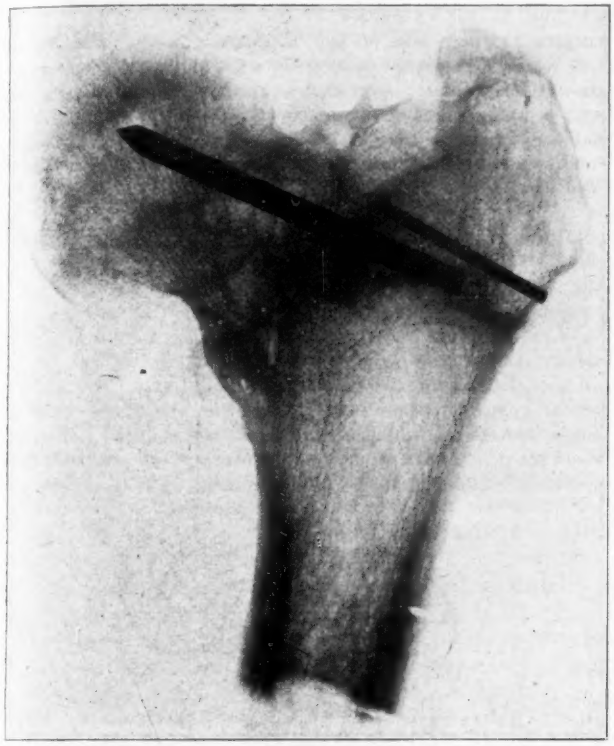
The patient can be easily handled in the use of the bedpan. The method is easy of application, and only fulfills the indications we require for all other solutions in continuity of bone, viz., securing coaptation of fragments without the possible intervention of the soft parts, overcomes all displacing tendencies of powerful muscular action instead of ignoring the action of more than one-half the muscles and displacing power of the limb's weight (Fig. 7).

The results prove that it is not necessary to allow most of the fractures of the femoral neck in the aged to produce cripples for the rest of their lives, or that they should suffer, except from the confinement, and that could be scarcely less by the plan of treatment proposed than to give the patient every possible liberty during the time required for procuring union. It also proves that the influence of the synovia is nil as a preventive of union. I do not wish to be considered as claiming that perfect results can be confidently expected in all, or in fact any of these and thereby invite prosecution for malpractice in every case of failure. What I do want, however, is to see the day when we will be able to lay aside prejudice and custom, if need be, and use the method that will give the best results. By this plan of treatment considerable freedom of movement can be allowed the upper part of the body as well as the opposite limb; so that the confinement is usually not irksome after the first few days.

DISCUSSION.

DR. C. E. THOMSON, Scranton, Pa.—My patient, an old man, 62 years of age, sustained a fracture in August, 1899. He was a miner by occupation, and the injury was caused by a fall of rock. No diagnosis was made at the time of accident. He was bedridden for three months; at that time he came under my care. A diagnosis of fracture of neck of femur was made and afterwards confirmed by *x*-ray photographs. The operation recommended by Gillette, of St. Paul, was proposed, accepted, and performed on Dec. 12, 1899. It consisted of a horseshoe incision around the trochanter major down to the periosteum. The flap being elevated, a second incision including periosteum and a section of bone (about one-third thickness of shaft) 2½ inches below trochanter was made, liberated with an osteotome, and turned up. This enabled us to get nearer the seat of injury. In this particular case the fracture was found to be comminuted. Several pieces of bone were removed. The fractured ends were then adjusted and a solid silver nail three-sixteenths of an inch in diameter and two and one-half inches long was driven through the neck and into the head of the femur, as the skiagraph shows. We were gratified to find that the nail held the fragments quite firmly together. The wound was closed with catgut suture and the entire leg and body encased in a plaster-of-paris spica, extending from the axilla to tip of toes. Patient had no elevation of temperature. The initial dressing was removed at the end of two weeks. At the end of five weeks the plaster-of-paris spica was removed and patient allowed to move about. He left the hospital on crutches and improvement continued. Seven months after operation he complained of pain, and a few weeks later a sinus appeared at seat of incision, and this was followed later by an accumulation of pus in the gluteal region, which was evacuated under cocain, but a slight sinus persisted. Improvement continued until last month (eighteen months after operation) which was the last time he was seen alive by us, when

he walked into the hospital without cane or crutch. He had 90 degrees of free and painless motion. Last Saturday night he retired as usual, and was found dead in his bed at 5 a. m. The coroner made a diagnosis of "heart trouble." I secured this specimen which is now being passed around. You will see, both by the specimen and the *x*-ray photographs, which



were taken directly on the plate, that the bony union is firm and complete.

DR. D. N. EISENDRATH, Chicago—I think we should discriminate between the different cases of fracture of the neck. The percentage of mortality is still very large and the reason for this is we do not recognize the importance of the fact of getting elderly patients up as soon after the fracture as possible. They die of bed-sores and hypostatic pneumonia; they are people with frail constitutions who can not stand confinement to bed, just as the last speaker showed us. The ideal treatment for these cases is in the use of the Thomas Ridlon hip-splint. It enables those people above the age of 60 and 65 to get up within twenty-four hours after the fracture. We confine these patients for 4 or 6 weeks in bed and then obtain no better results than obtained in ambulatory treatment.

DR. T. J. MAXWELL, Keokuk, Iowa—I had my first case of intracapsular fracture of femur in 1870. The case was a spare woman aged 52. I found the foot everted and leg shortened. I put her in a Day splint and made extension; she suffered pain continuously. At the end of a week there was flattening of the hip and I devised this plan or method that has been presented to you by Dr. Ruth. I put her under lateral extension and she recovered without shortening. Ten years afterwards I had another case—the bone that has been presented to you of an intracapsular fracture. However, this bone may not have been an intracapsular fracture. It might have been an impacted fracture, except for this: There were two inches of shortening, eversion of the foot and crepitation on extension and rotation. Now, the 25 cases presented to you ought to be evidence sufficient of the benefit; where there is no wearing, no pain after extension, the bed-pan can be used. This bone belonged to a man I treated 20 years ago. He was nearly 72 years old at the time of fracture. He had walked on it for twelve years.

DR. W. W. GRANT, Denver—This specimen is a most important one, if the man did have an intracapusular, impacted or non-impacted fracture. In examining it I am forced to express a grave doubt of its having existed. The cancellous tissue of the neck and the compact substance of the under or lower surface do not reveal any evidence of disease or past lesion whatever. The upper surface of the neck, near the trochanter shows a few osteophytes—evidence of old inflammation.

I call attention to the fact that the neck of this bone, from a man 90 years old, is of normal length. If there was an impacted fracture, how could you explain it? If, as stated, there was immediate shortening of two inches or more, with loud crepitus, it would be equally difficult, if not impossible of satisfactory explanation. Fracture of the rim of the acetabulum,

Army Medical Museum.
Rarifying osteitis with interstitial absorption.

with dislocation, would, with the extension treatment used, better explain the condition past and present.

There is a specimen in the Army Medical Museum at Washington which involved the very question at issue. I have examined it repeatedly and carefully. It looks something like this specimen, showing more evidence of the influence of pressure in walking. The neck is shorter and the angle more acute. The man, an old soldier, was treated for a fracture of the neck many years before his death. Dr. B. E. Frayer, a retired army surgeon, now of Kansas City, made the postmortem and sent the specimen to the surgeon-general as an

Army Medical Museum.
Rarifying osteitis. Front view.

illustration of bony union. A Philadelphia surgeon, visiting Washington, examined it. The specimen was sawed lengthwise and disclosed satisfactory evidence that no fracture had existed. It was regarded as evidence of interstitial absorption from traumatism, notwithstanding the doubt entertained by some of such a condition.

Yet, there seems no doubt of a dry form of inflammation, with fatty degeneration, and change of angle of neck, the latter produced or promoted by walking and absorption. Such a condition, with or without injury, seems more rational than the conclusion that the specimen here presented—perfect in coaptation of fragments, bony union and outline—was a complete fracture of the neck.

The condition involves deeply not alone the question of treatment and the interest of the patient, but in a medicolegal sense, the welfare and reputation of the surgeon.

CHAIRMAN—How old and how many years between the fracture, in the Washington specimen, and death of the patient?

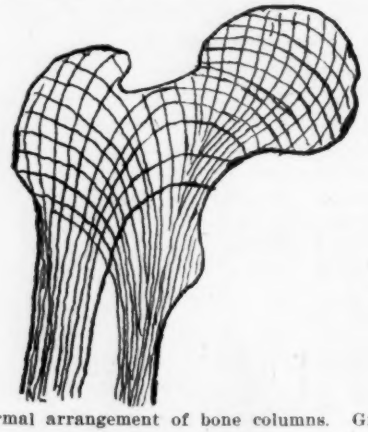
DR. GRANT—He was about 44 at time of injury and he died 10 to 20 years afterwards, I believe.

DR. MAXWELL—How can he account for two inches of shortening with crepitation on extension and rotation.

DR. GRANT—You might have it in the acetabulum without fracture of the neck of the bone and that extension would reduce it and you would have no shortening. I have often seen that crepitation mistaken for fracture of the neck of the bone.

DR. A. C. BERNAYS, St. Louis—When I saw that specimen at the Tri-State meeting four months ago I was skeptical; I thought it was not the bone of a man 90 years old, or a woman. I was inclined to doubt it as has been done by others this morning. Dr. Maxwell showed me the specimen at Keokuk. The thing impressed me so much that I got the superintendent of the poorhouse to let me have the bones of two of the oldest men that died during the month. They were over 80 years of age; I would not state now the exact age. I saw bones there just as solid in texture and as firm as that bone is. I became convinced that the bone is the bone of a man over 90 years of age. I simply want to bring that point out, because it is no more than just to the gentleman who presented it and to Dr. Maxwell.

DR. C. E. RUTH, Keokuk—I thought that this specimen might be questioned, and referred to that fact in my paper



Normal arrangement of bone columns. Gray.

because the result is so nearly perfect. If this fracture had occurred in the hands of a man of slight experience and ability, I might question the diagnosis of a fracture of the neck of the femur with a shortening of two inches and complete eversion of the foot; but Dr. T. J. Maxwell, a man of unquestioned ability and enormous experience, had this case, and now in regard to this specimen twenty years' time has elapsed. The man was vigorous and muscular; that shows by the prominence of the lines, tuberosities and tubercles. Again, I said the line of solution of continuity shows. It does show, but not as pronouncedly as in a case of marked displacement of the fragments; consequently, there is no large callus to mark the line of solution of continuity. I said there was eversion of the foot following the injury until the patient's death. Can you question that fact when I can barely pass this lead pencil between the great trochanter and the head of the femur? Did you ever see a femoral head in a well-developed individual as close to the great trochanter as that in a bone not previously broken? I never did, and I have examined a considerable number. This man walked with eversion of the foot from the time of his recovery from the fracture until his death, when it was removed postmortem. The only point where you can see evidence of solution of continuity externally is on this roughened line on the anterior surface of the neck nearer to the head than to the intertrochanteric line. Did any of you ever see so prominent a roughened line on the front side of the femoral neck between the intertrochanteric line and margin of the cartilage in a femoral neck not previously broken? Not by any means. Why? Because there is no capsule or other tissue requiring a roughened surface for attachment to the anterior part of the femoral neck. Why do we have evidence of solution of continuity on the anterior surface indicated in this roughened line if it does not show on the posterior surface? The reason is, we had an eversion of the foot and there was not so close an approximation of the fragments on the anterior surface as there was on the backside, and then the fracture line ran so close to the base of the neck at the great trochanter that external union is not discoverable. Many of you have seen a union of bone not discoverable by examination of the surface when adjustment was perfect. We have made a longitudinal section to show the condition of the bone inside. You can see the position from this point to behind the center of the bone, the dense compact tissue extending along the line of fracture in a curved direction [illustrating diagrammatically]. Let this represent the head, the great trochanter and the lesser trochanter. Now, here we have the solution of continuity running across about this line [indicating] as we have indicated by the roughened line on the front side. When we section the bone we find that the line does not run through all the thickness in the same position or course. We find here dense, compact tissue extending from the inner side just above the lesser trochanter beyond the center of the neck, where we have the more pronounced projection of compact tissue (callus). This is not the only specimen we may obtain. We

Heavy shading indicates position of compact tissue from callus, broken lines between indicate cancellous tissue devoid of columns; other lines practically normal, save neck has been drawn much too long.

have had twenty-five cases in which the diagnosis was beyond question. There is one case reported by a physician where the fractured leg has a better function than the other, and this patient was 86 years old at the time of the accident and there is no perceptible shortening.

In regard to pinning of the bones, as was mentioned by Dr. Thomson, this beautiful specimen shows bony union. A skiagraph has been taken and it shows three-fourths inch of shortening. This plan was all right if it was necessary. I do not say it is not necessary in every case; it has not been in my experience. It is certainly a good method if we have no better. I do not say we should never use it, but when we can avoid an operation in these cases we should do it, and not add an additional burden to an already serious condition. Unquestionably, fracture of the femoral neck in an aged person is serious. If we can avoid operation complications it is an important matter, and should always be done except in cases of delayed or non-union; then the pinning is certainly good surgery. I have not much experience with the Thomas splint. It would be all right if it held the femur out and forward as well as down. It makes no provision whatever for the tendency of the upper end of the lower fragment to drop behind the normal line when the individual lies on the back, as he will part of the time. It makes no attempt whatever to bring the femur out in its normal position. The trouble has been, in the treatment of these fractures, that we make our extension directly downward, instead of in the line of the neck of

the femur. You would not think of applying this principle of opposing muscular action to any other part of the body as here. We seem to forget that some of the muscles pull inward, while others pull directly upward; so it is absolutely necessary that we apply two forces, and that we overcome the muscular action so that the resultant of the two applied forces shall be in the direction of the neck of the femur and give the result of one acting in the long axis of the body, and the other in an outward direction.

HERPES ZOSTER OPHTHALMICUS WITH BRIEF REPORT OF FIVE CASES.*

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DENVER, COLO.

Herpes zoster ophthalmicus has been well known for the past third of a century. It is an acute inflammatory affection appearing in the course of the first and second branches of the fifth nerve, and is almost invariably unilateral. It occurs in elevated groups of firm oval or circular vesicles, on an edematous base, at the terminal points of the nerve filaments. The groups of vesicles do not all appear at once and their area is limited to the median line, and to filaments of the branches involved in the inflammation.

Herpes zoster ophthalmicus is a neuritis in which the ganglion of Gasser is involved, as has been proven by De Wecker. Charcot and others have demonstrated that in herpes zoster the ganglion of the posterior root of the spinal nerve is inflamed.

The disease is characterized by severe pain, which usually precedes the eruption by a period varying from hours to several days. The pain is generally sharp and shooting, and interferes with sleep and labor, but sometimes the pain is dull and causes less disturbance.

In the ophthalmic type, the first branch is the one most frequently involved, which includes the upper lid, forehead as far as the scalp, and also the nose. The second branch includes the lower lid, superior maxillary region, upper lip, and over the malar bone.

When the nasal branches are involved, the cornea is very likely to suffer, though exceptions to this rule have been observed.

The error of diagnosing herpes zoster ophthalmicus as facial erysipelas has frequently been made. Some of the typical features of the two diseases are as follows:

HERPES ZOSTER OPHTHALMICUS.	ACUTE FACIAL ERYSIPELAS.
1. It develops as a bright red inflammation limited to one side of the face, and appears in clusters of firm vesicles on an edematous base, that does not spread when once developed.	1. It develops as a purplish-red inflammation that spreads over all parts, without regard to the median line; the vesicles, when they appear, are in large blebs.
2. The eruption is preceded for hours or days by severe neuralgic pains, and as a rule no fever or rigors mark the disease.	2. It is ushered in by a chill, and marked elevation of temperature, also a burning sensation in the inflamed tissues. A dull headache may be present.
3. The inflammation being of a neurotic origin, it is limited to tissues where the nerve filaments terminate.	3. The inflammation being due to infection by the streptococcus erysipelatis, spreads through the lymph channels, and when deep invades the lymphatic glands.
4. The inflamed points are exceedingly painful to the touch.	4. The inflamed tissue is moderately tender to the touch.
5. Groups of punched-out scars are invariably left in the wake of the vesicles and remain through life.	5. Seldom is there a trace left after the exfoliation of the skin, though sometimes a thickening of the cellular tissue remains.

The following cases of herpes zoster ophthalmicus have come under my observation:

CASE 1.—On Jan. 8, 1891, I saw Mrs. H. C. K., in consultation with Dr. C. Jane Vincent of Alleghany City. Some seventeen days previous to my visit, the patient had developed herpes zoster ophthalmicus of the left frontal and temporal regions. The patient had suffered severe pain in the head and the left eye. The vision was reduced to counting fingers at two feet. She had considerable congestion of the eyeball, and a small central ulcer of the cornea. The iris was free and responded to light and accommodation. One week after my first visit the ocular congestion had subsided, the corneal ulcer had healed and vision so improved that she could see the features of a face a few feet from the eye. No record was made of any vesicles on the nose.

CASE 2.—Rev. J. S. T. M., aged 65, consulted me May 5, 1891. He stated that one month previously his left eye had been injured by a bit of steel. His family physician removed the foreign body three days after the accident. He then developed what was diagnosed facial erysipelas, the disease being confined to the left side of the forehead and nose with involvement of the left eye. He gave a history of having had three corneal ulcers and iritis of the left eye. Upon examination I found a moderately congested eyeball and a slight opacity of the cornea marking the location of the ulcers. There were also several pigment deposits on the anterior capsule of the lens, marking the points where the iris had been adherent. On the forehead, the supra-orbital ridge and the nose were the scars where vesicles had existed. Vision of the right eye was 6/12, and that of the left eye 6/18. The patient remained under my care for about a month, during which time his vision improved and the congestion of the eyeball in great part disappeared.

CASE 3.—In February, 1896, I was called by Dr. J. W. Higgins to see Mrs. J. W. P. The patient was a delicate woman of 56 years of age. She was suffering with intense neuralgic pains in the left side of the head and face. Her face presented the typical appearance of an aggravated form of herpes zoster ophthalmicus, involving the first and second branches of the trigeminus. The area involved was of a bright-red color with large groups of vesicles on the forehead, nose and cheek. The left eye was moderately congested and painful, but no involvement of the cornea existed. The neuralgic pains were excruciating. Two weeks after I saw the patient she became insane and was taken to an asylum, where she remained for four years, finally dying without regaining her mental balance. Upon inquiry of her husband I learned that she had manifested some evidence of mental disturbance for a month previous to the development of the herpes zoster.

CASE 4.—E. A. P., aged 36, a nurse, was referred to me Nov. 30, 1899, by Dr. H. T. Pershing, on account of having some irritation of the left eye. Patient came to Colorado eight weeks previously, owing to some pulmonary disease. Two weeks after reaching Denver he was taken with chills, having three or four daily for a week, with a temperature of 100 to 104. On Oct. 24,

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1899, the left side of his face became of a bright-red color and somewhat swollen. The inflammation extended from the scalp down the median line, including the left half of the upper lip and aeross the cheek and temple. Patient applied to a hospital and was refused admittance, on the ground that his facial disease was believed to be contagious, but was referred to another hospital where he was admitted as a case of facial erysipelas and there he remained four weeks. Three days after, the face became inflamed, clusters of clear firm vesicles formed on the inflamed area, those on the left side of the nose being as large as the little-finger nail. Crusts appeared later and those on his nose became quite dark in color and the patient states that the crusts were removed about the ninth day after the vesicles appeared, leaving painful ulcers. For the next twenty-four hours he experienced an intense itching and burning sensation over the affected area, and the following day a new crop

Herpes zoster ophthalmicus.

of vesicles appeared and the left eye became very painful, the lids swollen, and of a purplish hue. Some twelve hours later most of the swelling subsided and the color changed to a bright red. The eye remained painful and he was unable to bear the light. Upon examination (five weeks after the first appearance of the disease) vision of the right eye 6/6, left eye 6/30. Marked photophobia existed in the left eye. The lids were somewhat swollen, of a reddish hue and tender to the touch. Partial anesthesia of the upper lid existed. Conjunctiva was slightly congested, the cornea clear and partially anesthetic. Pupil was moderately dilated from atropin. There was hyperemia of the retina, otherwise no fundus changes perceptible. The left side of the nose showed loss of tissue and considerable cicatricial contraction, not unlike the appearance left by smallpox or a burn. In the scalp near the forehead on the line of the parting of the hair was a cluster of depressions marking the seat of a group of ulcers. The depressions on the temple were not very plainly outlined. One clean-cut depression existed on the cheek about an inch to the left of the lower half of the nose. The skin of the left temple was anesthetic on a line with the brow, and partial anesthesia existed over the rest of the temple and forehead to the median line and back into the scalp.

Some error of refraction was manifest in left eye, the correction of which brought the vision up to 6/12. Patient remained under my care for several weeks, during which time the neuralgic pains diminished, the photophobia became less and a slight improvement in the anesthetic areas occurred.

CASE 5.—Miss A., aged 22, came under my notice in November, 1900, through the courtesy of Dr. J. M. Blaine, under whose care the patient was at that time. She was passing through a moderate attack of herpes zoster ophthalmicus of the left side of her face, involving the first two branches of the fifth nerve. Three group of vesicles were present, one on the forehead, one on the temple and one on the lower eyelid. The eye was free from irritation. The patient had a great deal of neuralgic pain for several days previous to the developing of the eruption. After the disease had been properly diagnosed and the patient was improving she met another physician who told her she had facial erysipelas.

Remarks:—The first case was typical in its course and sequelæ. The disease was correctly diagnosed and the indications met by the attending physician. The second case, an intelligent gentleman, had been under the care of an eye surgeon of repute, and yet the disease had been diagnosed facial erysipelas. The sequelæ were typical of herpes zoster ophthalmicus, in the scars on the face and maculæ of the cornea, the latter being with the rule, that is, when the nasal branches are implicated. The third case presented an interesting feature in that the patient manifested some mental disturbance a month previous to the development of the herpes, and two weeks afterwards became so unbalanced mentally as to require close confinement, in which she was kept until she died. However, I am led to believe that the herpes zoster was merely a coincident in the mental disease and not a part of the central nervous affection. The fourth case, a nurse, spent a month in a hospital under the care of a very successful practitioner, and yet the true nature of the disease was overlooked. The affection was an exception to the rule, in that the cornea escaped ulceration, while the inflammation of the nose was very severe, bordering onto the gangrenous type. The fifth case had a moderate attack, neither the nose or the eyeball being involved.

Two of the five cases were males. Four were left-sided. Three of the five were diagnosed cases of facial erysipelas. Two had corneal ulcers. Two had severe nasal involvement without implication of the cornea.

The Medical Balloon-Ascents.—Four balloons were placed at the disposal of certain physicians of Paris who wished to study the effect of high altitudes on the blood, etc., free from the fatigue of mountain climbing. Drs. Tissot, Hallion, Raymond, Jolly and Henri were among those who made the ascent. The tests were made on large dogs or on the physicians themselves. The results harmonized in ever case and showed a marked and rapid increase in the number of red corpuscles in the blood when an altitude of about 9000 feet was reached, but this increase disappeared during the descent. Dr. Gaule had previously reported similar tests on himself, his wife and children, with the same result, the temporary augmentation of the red corpuscles at the high altitudes. The physicians communicated their experiences to the Society of Biology.

CORNEAL LESIONS IN ACQUIRED SYPHILIS.*

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CHICAGO.

The comparative infrequency of lesions of the cornea as manifestations or results of acquired syphilis, and the opinion of many ophthalmologists, among others Mooren, Panas and Perrin (according to Denarié) that corneal lesions are not caused by acquired syphilis, have prompted me to present this subject for the consideration of the Section on Ophthalmology, and to report some cases that have come under my own observation in which the relation of cause and effect seems to be clear.

The relation of inherited syphilis to interstitial keratitis seems to be well established, and the etiology of the disease can usually be fairly demonstrated in a large majority of the cases. But in a considerable number of cases of deep-seated inflammation of the cornea which simulate in many respects the interstitial keratitis of inherited syphilis, no confirmatory evidence of such taint can be shown; and it is in such cases that careful examination should be made for the history and signs of acquired syphilis.

Let me relate briefly the histories of three cases of deep-seated corneal disease in which syphilis seemed to be clearly the cause; in the second case the lesion was very similar to that seen in an ordinary case of interstitial keratitis; in the others the similarity was not very close.

CASE 1.—James B., colored, aged 29, came to my clinic at the Illinois Charitable Eye and Ear Infirmary, October, 1895, with trouble of right eye. There was considerable circumcorneal injection; some lachrymation and photophobia. He stated that the inflammation of the eye began about four weeks previously with sensitiveness to light and watering, and that soon after a spot was noticed on the upper part of the clear portion of the eye. It was not improved by the treatment that had been given by some physician.

Examination showed a triangular-shaped area of infiltration in the cornea the apex of which approached nearly to the center of the cornea, and involved a good part of the upper inner quadrant and which at first glance resembled a sclerotizing keratitis seeming to be almost continuous with the sclerotic, that is, there was no clear corneal space at the margin. Closer inspection with a Coddington lens, however, showed this opacity was deep seated, was more dense at the periphery and seemed to be made up of numerous clusters or foci of infiltration which were thicker than the intervening spaces. The corneal epithelium did not appear steamy, and there was an absence of vessels in the opaque patch. The iris responded rather sluggishly to light, but the pupil dilated evenly under atropin. The ciliary injection was more intense near the site of the corneal lesion. The left eye was normal. The patient stated that eleven months previously he had a hard chancre on the penis which got well in about two weeks. He also had a swelling in the groins, not particularly painful. Some two weeks later he had blotches on his face, body and arms, and also sore mouth and sore throat, and rheumatic pains at night. For this infection he had been under treatment at some clinic. At the time I saw him there was quite a number of nodules on the face and arms, the largest about the size of a pea; small patches of deeper pigmentation on the face, breast and arms, which he described as the remains of the old rash. The superficial glands of the body were enlarged; the epitrochlears being distinctly perceptible. The treatment embraced atropin, hot applications, protection of the eye from light and potassium iodid 20 grains t. i. d. For the first week or ten days the case did not seem to improve, but the eye became more irritable and the injection more intense. Then a rapid improvement began, the dose of the iodid being increased to 30 grains t. i. d. and the opacity began to clear up. At the end of four weeks the injection had entirely disappeared and the cornea was nearly of its normal transparency. The magnifying glass still showed some faint areas of cloudiness. The patient had good vision. He passed from my observation and I had no opportunity of seeing him later.

CASE 2.—Mrs. J., aged 34, well developed and nourished, and with good family history, was seen by me Jan. 20, 1897. She was married at the age of 24, and had two healthy children, which at the time I first saw her were living, aged 9 and 7 years. Some two years after the birth of her second child, she suffered from rheumatic pains, says her hair fell out a great deal, and that she had a peculiar rash on her face and body, together with sore throat. A little later she aborted at the third month of pregnancy, but still later carried a child nearly to time, but it was born dead. She has not been pregnant since.

About two weeks previous to her first visit to me the left eye became irritable, sensitive to the light and watered somewhat. She thought she had taken cold in it, and used some simple remedies, thinking it would promptly recover. When I first saw her I found the following condition: There was well-marked circumcorneal injection, more intense at the upper part of the cornea. Deep in the substance of the cornea were seen numbers of rather dense grayish spots of opacity between which the corneal structure seemed to be more or less hazy. These spots varied from 1 to 2 mm. in diameter, but were not distinctly outlined, their margins merging imperceptibly into the general haze. The corneal loop showed them to be infiltrations in the deeper layers of the cornea. The epithelium did not seem to be disturbed, and there was none of the steaminess of the cornea that is usually seen in interstitial keratitis. As is usually the case in that disease, the periphery of the cornea was first affected, the central portion being quite clear. The pupil reaction in both eyes was good, and there was no evidence or previous history of iritis. The right eye was normal. R. V. =20/20. L. V. = 20/40; with +0.50 Sph. slight improvement. Ophthalmoscopic examination was negative.

The posterior cervical glands were enlarged and indurated. Treatment was instituted at once, the patient being instructed to use a drop or two of 1 per cent. atropin solution in the affected eye three times daily and to protect the eye from light. She was given also 20 grains of potassium iodid three times daily. The opacity became more dense and invaded the central portion of the cornea so that the vision of the left became reduced to 10/200. Unlike an ordinary case of interstitial keratitis, there was very little vascularization of the cornea, almost none, although a few very minute vessels could be seen pushing in at the periphery. The right eye was not in the least affected. After a few weeks of the

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treatment the condition began to mend, the opacity growing lighter at the margins of the cornea and clearing away toward the center. At the end of two months after she was first seen, the cornea had become quite clear, with only a few indistinct faint nebulæ, seen only by oblique illumination in the upper part of the cornea. The vision of the eye had improved to 20/30.

CASE 3.—A man, aged 26 years, was seen by me in November, 1900, in my clinic at the Illinois Eye and Ear Infirmary. He was complaining of some discomfort in the right eye, the vision of which was lowered to 20/60. There was considerable ciliary injection. Five or six yellowish-gray spots of opacity varying in size from 1 to 1.5 mm. were seen in the cornea not far from the upper and outer limbus. The magnifying glass showed these to be infiltrates into the deeper layers of the cornea. Over the two spots nearest the center of the cornea, the epithelium was raised so as to form a distinct little vesicle, the contents of which seemed to be perfectly clear and colorless, when viewed with a lens from the side, although it rested on the yellowish-gray spot of infiltrate in the deeper cornea. The left cornea was normal. This patient stated that he had been infected with syphilis about fifteen months previously, and gave a distinct history of the disease. About five months after the initial lesion he said that he had a severe and painful inflammation of the right eye that had been pronounced iritis. At the time he was first seen the right pupil was irregular, and the use of atropin showed several old posterior synechiæ and pigment spots on the anterior capsule of the lens.

He was immediately given active antisyphilitic treatment and atropin locally, with the result that the opacities disappeared rapidly, and were entirely gone at the end of three weeks. The little vesicles disappeared without ulceration, and no trace of them or of the underlying infiltrations was left. The vision improved to 20/40.

I was inclined to regard this case as similar to the keratitis punctata described by Mauthner. In all of these cases the lesion affected only one eye, and this may be said to be the rule, whereas the keratitis from inherited syphilis is usually symmetrical.

As to the frequency of acquired syphilis of the cornea there is considerable variance of opinion. Hutchinson, in his work on "Syphilis," says: "Keratitis and complete deafness in the acquired disease are almost equally rare, but when they do occur it is in the secondary period."

Roosa, in an editorial interpolation in Schmidt-Rimpler's "Ophthalmology and Ophthalmoscopy," says: "As to acquired syphilis, I think it is very rarely, if ever, the cause of diffuse keratitis." According to Denarié,[1] Mooren, Panas, Perrin and many other French authors deny that acquired syphilis can influence the cornea. In the same article he reports a case of indubitable keratitis interstitialis caused by acquired syphilis, and also a case of gumma of the cornea, relieved by antisyphilitic treatment. The patient died of cerebral gumma, as shown by the autopsy.

Pulcharia Jakolewa,[2] analyzing 63 cases of diffuse interstitial keratitis, found that 10 per cent. of them were in patients older than 21 years. Two cases were distinctly due to acquired syphilis. Werndly,[3] among 15,000 patients, observed 42 cases of keratitis interstitialis, only nine cases of which were unilateral. The average age was 13½ years, the youngest being three months, the oldest 30 years. Acquired syphilis was proved in almost 50 per cent. of the cases. Haltenhoff[4] cites 72 private cases of interstitial keratitis and concludes that more than half were due to hereditary syphilis. Five were due to the acquired disease. The disease in question is certainly a rather rare one, but it may be as Valude says, the small number of cases on record is due to the neglect of observers to examine young patients for the signs of acquired syphilis.

While, naturally, most of the cases occur in individuals in adult life, it might be found in children who had been infected accidentally, and about whom there might be no suspicion of acquired trouble. Most observers who have described cases of keratitis from acquired syphilis have found it develop as a late secondary or as a tertiary manifestation.

Lawford[5] describes one case in which keratitis developed four and a half months after the primary lesion, and another in which eleven months elapsed between the primary sore and the keratitis.

Trousseau[6] has observed 11 such cases, 8 of whom were females, 3 males. The keratitis occurred in the second or third year after the infection, and in most of them only one eye was affected. Hutchinson records a severe case in which the keratitis was simultaneous with the secondary eruption and sore throat.

Lang[7] cites the case of a man who developed interstitial keratitis 12 years after infection. Trousseau and Trantas[8] believe that keratitis from acquired syphilis is not so rare as is commonly supposed, and report a case that occurred thirteen years after the primary disease.

The clinical features of acquired syphilitic keratitis vary. Different writers have described cases of diffuse interstitial keratitis differing in no essential particulars from the lesion as seen in inherited syphilis, except that it is more frequently unilateral, and the degree of vascularization is much less. Iritis may or may not be associated with this form.

More distinctive, however, is the form in which the lesion develops at some point of the corneal circumference as a rather dense grayish infiltration which remains limited to this part of the cornea passing through all its phases with no tendency to ulceration. Sometimes, as illustrated in Case 1, the dense opalescent opacity may extend quite up to the margin of the cornea and appear to be merged in the sclerotic; in other cases there may be a clear space between the site of the lesion and the limbus. In this form of the disease vascularization is not a prominent feature and is absent in most of them. This point is emphasized by Boucheron, Terson, Chevallereau and others. Irido-cyclitis and choroiditis may be associated with this condition, so that this form may be the same as that described by Mauthner[9] and Antonelli[10] under the name of "keratitis interstitialis punctata."

The reports of the cases of most observers do not show that there was much disturbance of the epithelium; on the contrary, many of them dwell upon this point and contrast it with the steamy condition of the cornea as seen in the interstitial keratitis of inherited syphilis.

In the third case reported there were two distinct vesicles on the cornea that were over the spots of infiltra-

1. Lyon Medicale, 1882, vol. xxxi, p. 487.
2. Beiträg. zur Pathologie der Krankh. der Cornea, Inaug. Diss., Zurich, 1872.
3. Calcutta Health Journal, 1892.
4. Bull. de la Soc. Franc d'Ophth., 1888.
5. Brit. Med Jour., Oct. 28, 1899.
6. Presse Medicale, May, 1897.
7. Ophthalmic Review, vol. v, 1886.
8. Annales d'Oculistique, Sept., 1895.
9. Zeissel's Lehrbuch der Syph., p. 278.
10. Annales d'Oculistique, May, 1895.

tion. These probably ruptured, but no ulceration followed. Finally, in very rare cases gumma of the cornea may exist. It seems, therefore, that the following conclusions are justifiable: There is such a lesion as syphilitic keratitis occurring at any time from the early secondary to the late tertiary period of syphilis. The disease is milder and shorter in its course than the keratitis from inherited lues. It usually affects one eye rather than both. It may assume either the diffuse or punctate forms and may or may not be associated with uveitis. Its most characteristic form is that in which there is a large dense infiltration, with little or no vascularization and no tendency to ulceration and no iritic complications.

It causes less injury to the cornea because, being more amenable to treatment, the infiltrate is removed before it forms permanent opacities. Active antisyphilitic treatment is most useful in shortening the course of the disease, whereas in the inherited form such treatment accomplishes little.

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DISCUSSION.

DR. S. D. RISLEY, Philadelphia—In my experience corneal disease due to acquired syphilis has been extremely rare. When disease involving the deeper layers of the cornea was observed among the secondary or tertiary manifestations of syphilis is was usually in broken-down patients, and presented much the same characteristics as we are accustomed to witness in illy-nourished and strumous patients. I have seen many examples of serpiginous ulcers involving the limbus of the cornea in colored people the subject of other syphilitic phenomena, but it has not been clear in my own mind whether to ascribe these to the direct influence of the syphilitic poison or to the indirect impairment of the general nutrition of all the tissues. I have seen much more frequently affections of the membrane of Descemet occurring in association with general uveitis in syphilitic people. This is of interest as demonstrating the correctness of those anatomic studies which from the standpoint of embryology regard the lining of the anterior chamber as a modified continuation of the uveal tract. In these cases Kneis has pointed out that the endothelial lining of the cornea suffers a solution of its continuity and the underlying portions of the cornea become involved in the disease. I regard it as quite remarkable that the cornea is not more frequently involved in more obvious manifestations of acquired syphilitic lesions. Since syphilis is so frequent, in the colored race especially, it is always to be borne in mind that in any case of acquired syphilis there may be an hereditary taint also, which might account in some instances at least for the occurrence of the corneal disease.

LACHRYMAL STENOSIS IN INFANTS AND ITS TREATMENT.*

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ATLANTA.

If one will examine the various text-books on ophthalmology, he will be unable to find any reference to the subject of the treatment of lachrymal stenosis in infants. The conclusion therefore derived is, that such a condition in infants is treated in the same manner as in adults. This I consider erroneous teaching. Very grave injury would frequently be done to the lachrymal passages of these tender little individuals if the same ruthless probing and cutting were done as is frequently the case among adults. During the last four years of my practice, I have had six cases of lachrymal stenosis in infants, all of which recovered perfectly without instrumental interference, and one case presented some such striking features, whether as a coincident or as a causal relationship I do not know, that I shall take the liberty of referring to it more in detail. In speaking of lachrymal stenosis in infants we must naturally do so in a very indefinite manner, not knowing whether the stenosis is in the puncta lachrymalia, the canaliculi, lachrymal sac or in the duct proper. This could only be determined by delicate probing or postmortem demonstrations, both of which methods being often impracticable. When we speak of lachrymal stenosis in infants we naturally mean such cases as present the usual accompanying symptoms of excess of tears in the conjunctival sac or even flowing out upon the cheek, some excoriations of the lower lid, and some slight catarrhal condition of the palpebral conjunctiva. There need not have been previously a dacryocystitis either acute or chronic.

The well-known fact that the mucous membrane in infants is so susceptible to swellings and edematous conditions, will in a great measure account for the stenosis occurring in individuals of this age. Yet such pathologic conditions do not constitute the whole etiologic factor in these cases.

For convenience I have made the following groupings of lachrymal stenoses occurring in infants.

1. Stenosis due to Congenital Malformations and non-development in some Portions of the Lachrymal Passages.—Cases of congenital malformation in some portion of the lachrymal passages have been reported by several observers and the presence of such must not be ignored when cases of epiphora in infants are brought to us for treatment. Congenital absence of one or more puncta lachrymalia have been noted by various writers.

Benjamin Travers,[1] as early as 1824, says in his book on "Diseases of the Eye," that he had seen a congenital deficiency of the puncta, but the case was very rare, obliteration being much less so. Schon[2] in 1828 noted the fact that puncta had been observed closed entirely in new-born infants, and cites two or three authors who mention the condition or had seen cases. V. Walther[3] states that congenital atresia of the puncta does not occur except in connection with monopsia or micropsia; and Desmarres[4] states that Seiler, Schoen, Carron and others have noted congenital atresia of the puncta mostly in connection with concomitant absence of the eye. The congenital absence, however, of these puncta have been observed by others who make no mention of any other congenital defect. Mooren,[5] in a statistics of 108,416 patients, gives only one instance of "defectus punctorum lachrymalium."

In our own country, a case has been reported by Burnett[6] where there was congenital absence of both puncta lachrymalia of the left eye and of the lower punctum of the right eye. The case terminated successfully under operation. Theobald[7] has also reported a case of congenital atresia of one lower punctum. Besides these, cases of congenital atresia or absence of puncta have also been reported by Zehender,[8] Vossius,[9] Fieuzal,[10] Emmert,[11] and Blanchet.[13]

Cases have been reported where the puncta were not absent but only closed by a membrane. Le Henoff[14] calls attention to this condition, claiming that it is

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not rare in infants to find a small pellicle covering the opening of the puncta.

A. Rochon-Duvignaud,[15] in a very exhaustive article, gives the results of his researches on the anatomy and pathology of the lachrymal passages in the adult and the new-born. According to this observer, in the fetus the nasal duct, up to a certain period, is separated from the nasal fossa by a membrane. The duct also exhibits annular diaphragms or valves at various points along its course; these diaphragms were found by the author in the new-born in more than half the cases. Persistence of a nearly imperforate membrane closing the lower end of the nasal duct, or the presence of diaphragms with only a minute passage through them, is a cause of stenosis in infants, especially when from the stagnation and accumulation of the secretions, infection, inflammation and swelling of the mucosa result. Bochdalek,[16] as early as 1866, in a contribution to the anatomy of the lachrymal organs, calls attention to the fact that in extremely rare cases the inferior valvule of the lachrymal sac develops so as to form a nearly imperforate thin membrane closing the canal. He mentions two cases where this condition existed.

The presence of these valves, especially at the junction of the sac with the lachrymal canal, and the junction of this latter with the nasal fossæ, are considered by many to play the most important rôle in the stenosis found in infants. For instance, Beraud[17] in his researches states that a valve at the junction of the nasal duct and nasal fossa, is missing in only 3 or 4 per cent. of cases, and he found complete obliteration of this orifice in 15 per cent. of the cases of lachrymal stenosis. He also states that the so-called valvule of Taillefer, situated about the middle of the nasal canal, is present in about 6 per cent. of cases and may be so developed as to close the canal.

2. Lachrymal Stenosis occurring as the result of Spasmodic Contraction in some Portion of the Passages.—Allow me briefly to relate a case which occurred in my practice more than a year ago: Master B., aged 2 months, was brought to my office for consultation on account of an epiphora of both eyes. On examination I found a slight catarrhal conjunctivitis, while the puncta were freely open. The condition had been noticeable for three weeks past. No discharge could be pressed from the lachrymal sac. A wash was given for the eye, consisting of sulphate of zinc, boric acid and water, to be used three times daily and to be accompanied with pressure over the lachrymal sac. This was continued for three weeks with no very decided improvement in the condition. About this time the father noticed that the infant seemed very fretful and on consulting his family physician it was decided to have the infant circumcised. This was accordingly done and an immediate cessation of the epiphora was noticed which has continued constantly ever since. I then began to look up the literature to see if I could find a similar case. This I have been unable to do. The relationship between the circumcision and the cessation of the lachrymal symptoms was so close that I can not but consider it in the light of cause and effect.

In looking up the literature of the subject, I find that there is some reference to spasmodic constriction of the lachrymal passages as a cause of stenosis. In the Transactions of the French Ophthalmological Society for 1891,[18] Galezowski states that epiphora often occurs from spasmodic or irritative muscular contraction of the lachrymal passages without any organic changes being present. Wicherkiewiz, at the same meeting, corroborated Galezwoski's observation as to the occurrence of spasmodic strictures. Seggel,[19] in quite an elaborate article, calls attention to the presence of muscular tissue around the canaliculi and puncta, and reports a case of stenosis which he said was due to contraction of the spinchter of the punctum. It is the atrophic condition of this sphincter, in my judgment, which is the frequent cause of "watery eyes" seen in the very aged.

R. Schirmer,[20] in "Saemisch. Handbuch," says that spastic constrictions of the canaliculi may occur (as shown by McNamara and Galezwoski) in nervous and anemic persons and in this way produce the same disturbances as other obstructions. McNamara,[21] in his work upon the eye, mentions briefly spasmodic stricture of the canaliculus, which occurs either at the inner or outer opening of the canal. The accompanying watery eye, if long continued, will be of intermittent character.

Fano[22] calls attention to the existence of spasmodic epiphora due to spasmodic constriction of the lachrymal puncta and canaliculi by spasm of the muscles of Horner. The condition occurs only in women of nervous temperament, often in association with neuralgias. Since the occurrence of this case in my own practice, I am firmly convinced that we should look more carefully into conditions which might act as a reflex cause in producing this spasmodic constriction in the lachrymal passages. Observation teaches us that epiphora in infants sometimes disappears in a night, and in such cases may we not attribute this result to a relaxation of a spasmodic constriction?

3. Stenosis, the Result of a Catarrhal Thickening of the Mucous Membrane at some Point in the Lachrymal Passages.—This third and last consideration of stenosis I would place as the most frequent cause of epiphora in infants. In the cases which I have seen there was a slight catarrhal conjunctivitis which was either primary or secondary to a similar condition in the lachrymal passages. In only one instance could secretion be expressed from the lachrymal sac. In two instances there was a marked catarrhal condition of the nasal cavities. This latter organ should always be closely examined in such cases.

A. Peters,[23] of Bonn, has reported seven cases of lachrymal stenosis in infants due to a catarrhal condition of the mucosa of the lachrymal sac. He believes that blennorrhea of the lachrymal sac in new-born infants is caused by the persistence of the fetal membrane closing the lower end of the nasal duct. Fluid accumulates in the sac, the product of cellular disintegration and secretion from the mucosa of the sac, rather than derived as an inflammatory exudate from catarrh of the mucous membrane. The condition is one of atresia and retention and not catarrhal inflammation.

He recommends simple treatment—expression of the contents of the sac by digital pressure and repeated irrigation of the eye without the use of the knife or probe. He quotes Vossius and certain French authorities in favor of gentle treatment. He strongly urges this palliative treatment in preference to any instrumental applications.

In support of Peter's theory, Lange[24] reports a case of blennorrhea of the lachrymal sac in a child five days old. Pressure upon the sac was followed by a discharge of laudable pus from the nasal cavity of the same side, but none came from the lachrymal canals. All symptoms of lachrymal obstruction disappeared in a few days. Heddaeus[25] confirms the observations of

Peters, but differs from him in thinking that the mechanical expression of the contents of the sac is unnecessary. Konigshofer,[26] in discussing the epiphora in children, says that dacryocystitis or dacryostasis neonatorum, according to his observation, is mostly a temporary blocking of the passages by mucus or a persistence of a thin epithelial closure of the nasal end of the duct. All cases observed by him were cured by industrious expression of the lachrymal sac, a passage of the sound being necessary in only one case. Landolt,[27] in treating of obstructions in the lachrymal passages of new-born, has this to say in regard to the treatment; according to his observations it is never necessary to slit the puncta. He dilates the punctum with a conical sound and injects either a bichlorid solution 1 to 5000, or 10 per cent. solution of boric acid into the sac with an Anel's syringe.

Before writing this article and after consulting the various works on ophthalmology to see what the authors had to say in regard to epiphora in infants, I addressed letters to twelve ophthalmologists and asked them to answer the following questions:

1. Have you ever seen any case of stenosis of the lachrymal passages in infants which you thought was due to spasmodic contraction, the result of a reflex irritation?

2. What treatment do you use for lachrymal stenosis in infants?

To these letters I received seven replies, as follows:

Dr. H. Knapp: 1. No. 2. I leave the lachrymal trouble alone, as it commonly rectifies itself by the development of the nose.

Dr. E. Gruening: 1. I can not recall a case of stenosis of the lachrymal passages, either in infants or adults, due to spasmodic contraction. 2. In cases of lachrymal stenosis in children I probe under ether, using Theobald's probes.

Dr. William Cheatham: 1. No. 2. I have seen, I think, as many as five cases of stenosis of the lachrymal duct in infants, all relieved by from one to three probings with Bowman's No. 1, without incision of the punctum.

Dr. Swan Burnett: 1. I have never seen a case of stenosis of the lachrymal passages in an infant which I thought was due to spasmodic contraction. 2. The few cases of dacryocystitis in infants that I have seen, I have treated in the usual way by opening the canals and treating the sac. I don't remember that I ever saw a case of stenosis not due to inflammation.

Dr. Adolph Alt: 1. I do not remember having ever seen a stenosis of the lachrymal passages in infants which I thought was due to reflex contraction. 2. The cases of stoppage in infants, if not due to an infection of the mucous membrane of the drainage apparatus, I have always referred to an epithelial adhesion and this usually gave way to one or two probings.

Dr. George de Schweinitz: I have never seen a case of stenosis of the lachrymal passages in an infant which I thought was due to a spasmodic contraction, the result of reflex irritation. 2. The treatment I use for lachrymal stenosis in infants depends entirely upon the etiology. Many of the cases get well without any treatment except some irrigation of the conjunctival sac and nares; they get well simply because in the development of the nose a pre-existing contraction of the passages disappears. Others, evidently dependent upon a nasal catarrh in the broadest acceptation of the term, get well by nasal treatment. A few with a good deal of purulent secretion are associated with stricture and seem to me to demand the same treatment that a similar condition in adults requires. I very rarely, however, and I have seen a good many cases, have found it necessary to divide the canaliculus and pass probes.

Dr. Samuel Theobald: 1. No. 2. I have met with a good many cases of blennorrhea of the lachrymal sac in infants accompanied with epiphora. In most of these cases there was not an actual stricture of the duct (such as we meet with usually in adults), and they have gotten well without operative interference. My favorite remedy is a collyrium of hydrarg. bichlorid 1/24 gr., sodium chlorid 3 grs. to ounce of water. This to be dropped into the inner corner of the eye three times daily, each application to be preceded by an attempt to empty the lachrymal sac by pressure with the finger tip. Occasionally it happens that no benefit results from this treatment. Then after it has been thoroughly tested for some weeks, I resort to operation, slitting the canaliculus and probing the duct.

In all of my cases a cure was established by the use of an astringent wash to the conjunctiva in conjunction with massage over the lachrymal sac. In no instance was a probe used. I can imagine some cases where it is necessary to dilate the canaliculi with a probe, but never a case where it is necessary to slit the canaliculi and pass probes into the nasal duct. Palliative measures, such as the use of astringent washes, accompanied by massage over the lachrymal sac, will accomplish the necessary result in all but exceptional cases, even if the treatment has to be continued for many weeks. I believe that the canaliculus should never be slit and thus destroying forever the contractile effect of the sphincter around the puncta. At the same time it is necessary to see that there is no blocking of the nasal passages with inspissated mucus. Cleansing of the nasal passages should be as routine as the cleansing of the eye. I am firmly convinced that many cases of epiphora in infants will be relieved if more judicious attention is given to the nasal cavities.

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Sugar as a Stimulant for Muscular Exertion.—Lop states in the *Gaz. des Hop.*, 120, that the midwives in the south of France have long administered sugar as a means of combating inertia of the uterus.

A STUDY OF A FETAL STOMACH,

WITH SPECIAL REFERENCE TO THE ORIGIN OF ACID SECRETING CELLS.*

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This specimen was examined with a view to determining the origin of the acid cells. It is proper to begin by considering the origin of the hydrochloric acid. We assume that the works of Wesener and others have demonstrated that the acid is derived not from the food, but from the cells of the stomach wall.

Assuming then that it is proven that the acid is secreted, we pass to the question as to whether the acid is in combination with the ferment. A review of the literature convinces us that there is a loose chemical combination between them. Where is this combination effected? Is it in the same cell, or are there different sets of cells—one secreting ferments, another acid. Again, we conclude that there are different cells.

If there is a division of function, which cells are secreting acid, and, as a subsidiary proposition, whence are these cells derived? The method of distinction that we have used are the tinctorial procedures.

It is proper to determine the value of such methods. Ehrlich's holding was that the reaction of the different portions of cell protoplasm could be rather easily distinguished by their staining peculiarities. For example, if chromatin filaments stain with a basic stain, it was proof that those filaments were acid in reaction. The work of Mathews would tend to upset these ideas.

Mathews found that while cytoplasm albumin usually stains with an acid stain, and is therefore alkaline in reaction according to Ehrlich, it will stain with a basic stain, if it is in an alkaline solution, and that in slightly acid or neutral solutions the basic dyes will stain any element of the tissue which contains an organic acid in salt combination with a strong base. The basic dyes in alkaline solution may thus be used for the detection of albumins in the cell and especially of all albumins possessing a phenol or tyrosin group. In no sense are the basic dyes a test for nucleic acid or chromatin. As to the acid stains, he says the acid stains enter into chemical combination with the albumin molecule in protoplasm and probably with an NH_2 group in that molecule.

Silenfeld showed that protoplasm would stain with an acid stain if its nucleic acid was saturated with albumin. If the nucleic acid was not wholly saturated it would stain with a basic dye.

The conclusions that we are entitled to draw are that the question of staining is more complicated than Ehrlich must have thought, and that there is more to the subject than the reaction of tissue and the stain. Nowhere is this seen better illustrated than in the stomach cells.

The labors of Stinzing, Heidenhain and others have shown that free or loosely combined mineral acid in a protoplasm does not cause that protoplasm to stain with a basic stain. If Ehrlich's position were right, then the protoplasm of the acid cells should stain with a basic stain, and we could, therefore, always pick them out with great ease. We are not able to distinguish them with this simplicity and ease. Nevertheless there are stains that pick out what are called acid cells with fair clearness.

The sections examined by us were stained by Stintzing, Ehrlich, Biondi-Heidenhain, hematoxylin-erythrosin-acid fuchsin, Romanowsky's alkaline methylene blue and eosin stain, thionin, polychrome methylene blue, toluidin blue, and hematoxylin-eosin. What seemed a specific tint was given by the hematoxylin-eosin stain, the hematoxylin-erythrosin-acid fuchsin and the polychrome methylene blue.

In these sections we notice that the acid cells appear as large masses of granular protoplasm with several vesicular nuclei. These nuclei have a moderate number of nodal points. The protoplasm of the cells shows no trace of lines of division or incomplete fusion. The protoplasm otherwise shows no evidence of degeneration. The nuclei show no degeneration phenomena. With the Stintzing stain, the yellowish-red color of these cells differs from the tint of any other of the stomach cells. It is just the same shade as that noted by us in the supposed acid cells of the actively secreting stomach of a dog. These cells are frequently between the principal cells and the muscularis mucosa; frequently,

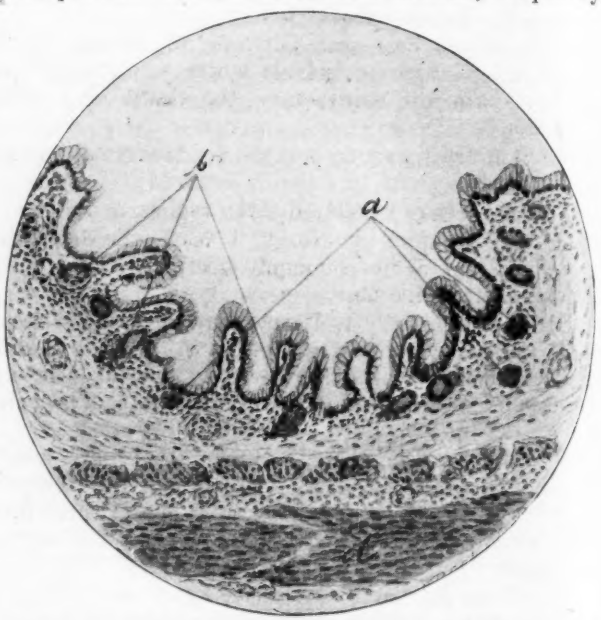

Fig. 1.—*a*, Masses of so-called acid cells; *b*, gland tubes; *c*, inner circular muscle; *d*, outer longitudinal muscle.
Leitz, Eye piece 3, Ob. 4.

however, they are well below the muscularis mucosa, in the submucosa.

Are they derived from the principal cells, from preexisting acid cells, from the ordinary submucosa cells, or from the special cells in the submucosa?

Neumeister speaks of the "wandered off" cells of the lumen of the glands. We are not certain, yet we think he means that they have wandered from the principal cells to the muscularis mucosa or even underneath. He does not demonstrate the point that he speaks of by any illustration. Carlier refers to the acid cells as oxyntic cells. He does not say where they originate.

Might these cells not be derived from the submucosa? We can not make out any transition cells between the principal cells and these, either as to outline, staining peculiarities, general appearance or location. It is true that glands were just beginning to develop in this organ, but if these are glands we ought to see some evidence of down-growing and indenting of the muscularis mucosa. This is not seen in this specimen. The cells in the underlying tissue are without any indication of a more superficial origin. The possibility that these are epi-

* Read at the Fifty-second Annual Meeting of the American Medical Association in the Section on Pathology and Bacteriology, and approved for publication by the Executive Committee: Drs. A. Stengel, W. S. Hall and L. Hektoen.

thelial cells does not constitute a barrier to their origin in the submucosa. The work of Leo Loeb shows that cells are in some measure transformable; that the old blastic divisions are not unchangeable.

As to the origin of the acid cells I quote the following: "Stintzing believes that acid cells are changed into chief or pepsin cells. Breemner believed that the acid cells were expelled with each digestive act. Heidenhain says that this has been disproven. Herendorfer believed that the parietal cells developed into the principal cells. Edinger believes that the parietal cells develop from the principal cells. Orth agrees with Edinger. Toldt and Storler believe the relation to be just the reverse. Nueikler believes them to be of the same origin." It is well to know, however, that the major part of this work was done in the olden times when the cells were supposed to stick closer to their blastic fellows than we now think; when structural methods were scarcely as complete, and when our knowledge of the cells, usually situated in connective tissue, was not so great as that of to-day.

We have no opinion to offer as to the origin of these

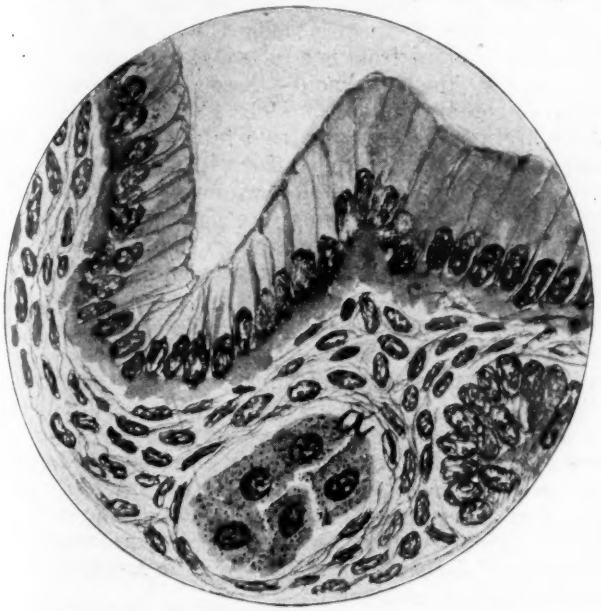

Fig. 2.—*a*, So-called acid cells: *b*, stomach gland. Leitz, Eye piece 3, 1/12 oil.

cells. Whether from the epithelium wandering occasionally into the deeper tissues, or from the mesoblastic elements wandering frequently into the epithelial zones we do not say. We merely call attention to certain cells sometimes in the mucosa and sometimes in the submucosa which contain a single vesicular nucleus, generally centrally placed and with a large amount of cytoplasm, this cytoplasm having coarse granules that stain with acid stains to just the same shade as the acid cells of the stomach tubules.

What proof have we that these border cells are specific, differing from the more universally recognized ferment cells? We note the following points: The location of the cells are sometimes in the deeper epithelial structures, sometimes in the muscularis mucosa, sometimes in the submucosa; the principal cells are always in the one place; the coarse granules stain a peculiar shade with every stain employed, a shade not seen anywhere in the principal cells; the basic third of the principal cells are granular, but their shade is not the same as in the border cells. The nearest approximation to this shade is in the material found adhering to the free surface of the stomach mucosa. Thiohari speaks of the differences in shade, size and distribution of the granules in these two kinds of cells. He says that in the border cells there is an outside zone of coarse staining granules, and that these seemed to form the only cell wall. It was also noted that internal to this the granules seemed to be in small groups of two to five. There were large protoplasmic masses, often triangular in shape and with several oval or spindle or semmel shaped, vesicular, nodal nuclei. This shape in no way resembles the long, narrow, principal cell, with its clear or faintly granular outer third and its basic third with its mixed basic and faintly acid granules.

In our specimen we found no peri-nuclear, clear vacuoles, as described by Hambergher; but we are to remember that Hambergher only observed these after some hours of digestion.

We find these cells most abundant in the cardiac end, and wholly absent in the pyloric end. We find them occasionally quite removed from the principal cells. These were our reasons for believing the two cells to be of a different nature and probably different in function.

Carlier and Thiohari both believe in separate acid cells. Our specimens would not indicate that the hydrochloric acid exists in the oxintic cells as hydrochloric acid. On the contrary, their method of staining would indicate fairly clearly that within the protoplasm the hydrochloric acid is not only satisfied by albumin or some other base, but that that base still had some basic bonds with acid affinities. It must leave the cell as some easily decomposed compound, which, as Carlier outlines, gives its acid to zymogen to form zymin.

NOTES ON THE INTRACELLULAR OCCURRENCE OF DIPLOCOCCUS PNEUMONIÆ IN CEREBROSPINAL MENINGITIS.*

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MINNEAPOLIS.

That the diplococcus pneumoniæ, in common with other micro-organisms, may occasionally be found within leucocytes as the result of phagocytosis in inflammatory processes, has been frequently noted by numerous observers. Its extracellular position, however, in the exudate in cerebrospinal meningitis is so markedly the rule that the point is used as a differential characteristic between the organism and diplococcus intracellularis meningitidis. Consequently, the preponderatingly intracellular position of diplococcus pneumoniæ in the following four cases of cerebrospinal meningitis makes them of sufficient interest to warrant their record.

CASE 1.—In June, 1898, a specimen of cerebro-spinal fluid from a case of cerebrospinal meningitis, removed by lumbar puncture during the third week of the disease, showed in direct cover-slip preparations, numerous encapsulated, lanceolate, Gram-staining diplococci, most of which were intracellular. Cultures in broth, on plain and blood agar, and Löffler's blood serum developed, without admixture of other organisms, a diplococcus, which, despite its original intracellular position, was readily identified as diplococcus pneumoniæ. Unfortunately, no animal inoculations were made, since the pressure of other work prevented it until the cultures

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had died out. The patient died two days after the specimen was taken, but no autopsy was obtainable.

CASE 2.—Two months later specimens from this case were obtained. The materials for this examination, consisting of the left frontal and parietal lobes, cerebellum, pons, and medulla of a child, were received in the laboratory Aug. 25, 1898, at 11 a. m. The attending physician, Dr. George D. Head, has kindly furnished the following clinical and autopsy notes:

Baby S., an inmate of the Children's Home, age 7 months, was well from birth, except a few superficial abscesses present some time in June or July. Became sick Aug. 19, 1898. Child was dull, restless and refused food. Passed several foul stools, which were pus-like in appearance, but, which on microscopic examination, showed no pus; these were simply masses of bacteria. Temperature 102. All other symptoms negative. Diagnosed enterocolitis.

August 20: Child is brighter and takes food; moves head from side to side; puts left hand to head as if to wipe away some object; temperature 101; some stupor later in the day; bowels do not move so often as on previous day.

August 21: Temperature 99½; stupor continued; takes food. Stools more normal; peculiar ashen hue about face, which indicates profound infection.

August 22: Temperature 101; no other change.

August 23: Temperature 101; takes some food; duller and very quiet.

August 24: Temperature 102; child restless; diagnosed meningitis.

August 25: Temperature 103; stupor; general condition of child worse.

August 26: Child dead in the morning at 2 a. m.; no convulsions.

An autopsy was held 7 hours after death. A complete examination was made, and all organs except the central nervous system were apparently normal. Over the entire convexity of both cerebrum and cerebellum was a gelatinous exudate, filling the pia and extending, though in smaller quantity, over the base of the brain. Portions of the brain and medulla were placed in a clean jar, which had just been washed out several times with boiled water, and taken immediately to the laboratory.

When the specimens were received in the laboratory, cover-slip preparations were made direct from the exudate and cultures from the same source were sown on serum, glycerin agar and in glucose glycerin broth. Specimens were then divided into small pieces and portions of each placed—nine hours after death—in 96 per cent. alcohol and in 10 per cent. formalin solution.

Direct cover-slip preparations stained by eosin and methylene blue and by Gram-Bismarck brown, showed numerous lanceolate and occasional encapsulated diplococci, sometimes outside of, but more frequently definitely within, polymorphonuclear leucocytes. These diplococci retained Gram's stain with great tenacity.

Cultures on serum and agar, after 24 hours in the incubator, showed few small, pin-point, moist-appearing colonies, which, when examined in stained cover-slip preparations, were found to be composed of diplococci, which retained the stain by Gram's method.

Cover-slip preparations from the broth cultures showed lanceolate diplococci in single pairs and in chains consisting of from two to eight pairs each. These retained the stain by Gram's method. The organism was sown on the following culture media with the results noted: Glucose glycerin broth gave a very faint growth and no precipitate; plain broth, a very faint growth and no precipitate; litmus milk, after two days, faintly acidified and slightly coagulated. Plain agar gave a scant growth, otherwise like glycerin agar (see above). Glycerin agar was characteristic as noted above. Litmus lactose agar, after 24 hours, showed colonies similar to those on glycerin agar, and medium slightly reddened.

Löffler's blood serum was characteristic as noted.

Parallel cultures of diplococcus intracellularis meningitidis were made at the same time and on the same media, the specimen having been isolated two days previously from an acute case of meningitis in a child. The cultures of the two micro-organisms were sufficiently unlike, so that, aside from their morphologic and staining characteristics, there was little difficulty in differentiating them.

The tissues fixed in 96 per cent. alcohol and in 10 per cent. formalin were further hardened, embedded in parrafin and cut five, ten and twenty microns thick and stained with hematoxylin and eosin, Gram-Bismarck brown, eosin-Unna and by Nissl's method. They presented nothing aside from what is ordinarily found in cases of intense, acute meningitis, except those stained by Gram-Bismarck brown and Gram-eosin. Here in the subpial exudate and also scattered in sections of vessels throughout the tissue, are great numbers of Gram-staining lanceolate, frequently encapsulated diplococci. These are most frequently lodged within leucocytes. Many cells contain from one to twelve cocci each. The cells nearest the arachnoid—those best preserved—nearly all contain diplococci. The fibrinous mass nearest the brain substance contains a few intact leucocytes, some of which are literally stuffed with diplococci. Numerous isolated pairs of diplococci are seen in the vacuoles within the brain. None are observed within the nerve cells proper and none are present in the vessels except rarely in leucocytes, apparently within the vessel walls.

3. CASES IN HORSES.—In June, 1899, specimens were collected from two horses, killed, when almost dead, for purpose of autopsy during an outbreak of meningitis near Herman, Minn. These animals had been sick but a few days. At the autopsy very perfect gross lesions of meningitis were present in the brain and cord. The cases presented nothing of unusual interest other than that direct cover-slip preparations and sections showed numerous Gram-staining, lanceolate, frequently encapsulated diplococci, which were more frequently intracellular than extracellular.

Cultures obtained without admixture of other organisms from both cases showed typical diplococcus pneumoniæ of unusually abundant growth. Twenty-four hour colonies on rabbit's blood agar and Löffler's serum occasionally almost equaled in diameter colonies from parallel sowings of diplococcus intracellularis isolated from a case in a young man three days previously. The cultures from these cases of equine meningitis were inoculated alternately subdurally and intravenously, into six rabbits. These animals all died of meningitis in from twenty-four hours to four days with marked symptoms and typical lesions of meningitis.

From the central nervous system of each of the rabbits direct cover-slip preparations showed numerous diplococci, morphologically identical with those in the original preparations and more frequently intracellular than otherwise. The experiments were continued by the inoculation subdurally of a horse with 10 c.c. of an emulsion of a twenty-four hour, plain, broth culture, fourth series from original horse, with five twenty-four hour original serum cultures from the brains of two of the six rabbits mentioned above. Sixty hours after the inoculation the animal died, and an autopsy was made at once, which revealed typical meningitis, very intense in

character. Direct cover-slip preparations, and, later, sections showed enormous numbers of diplococci, morphologically like those in the original material, and in most instances, contained within cells.

It may perhaps be worth noting that in all of the cases, two human beings, three horses naturally infected, six rabbits and one horse inoculated, the organism appeared to be particularly virulent.

These instances serve to show that it is possible occasionally for diplococcus pneumoniæ to occur abundantly within the cells of the exudate in meningitis. This may indicate a closer relation than is ordinarily supposed to exist between diplococcus pneumoniæ and diplococcus intracellularis meningitidis. The point certainly merits further investigation.

The position of the coccus relative to the cell is occasionally of less importance than its shape, arrangement, staining reactions or cultural characteristics. Pathogenesis in all its phases as yet has been insufficiently studied to be of much help in differentiating these microorganisms. It would certainly appear that great care must be exercised in diagnosing, from direct cover-slip preparations of meningeal exudates, between diplococcus pneumoniæ and diplococcus intracellularis meningitidis.

DISCUSSION.

DR. HALL—I would like to ask Dr. Wilson if he has ever encountered a tendency on the part of the diplococcus pneumoniæ to enter the cells in clinical pneumonia. It seems to me that besides its habit of entering leucocytes in cases of meningitis it also shows the same tendency in organs of a different character like the lungs, etc.

DR. WILSON—I have observed just this point in cases of pneumonia, though in less degree than in these cases of meningitis. I think the occurrence in pneumonia has been reported previously by a number of other observers.

SMALLPOX AND VACCINATION,

WITH SPECIAL REFERENCE TO GLYCERINATED LYMPH.

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For three years smallpox has existed in the United States to an extent not generally appreciated. The "Public Health Reports" of the Marine-Hospital Service give a total of 12,947 cases in various states and territories from June 28 to Oct. 25, 1901, and this is not a complete report for the whole country. In Michigan, according to Dr. H. B. Baker, there have been more than 3000 cases so far this year, while the prospect for the future is suggested by the fact that new foci are discovered at a rapidly increasing rate. Most of the cases have been mild, and this fact goes far to explain the great spread of the disease. It has often been so mild that it attracted little or no attention, or, if seen by a physician, was thought to be something other than smallpox; hence the numerous and often absurd names given, such as Cuban itch, cedar itch, etc. Similar conditions prevail whenever a disease otherwise rare breaks out with anything but the most schematic features. Often, perhaps most frequently, inadequate steps have been taken to clear up the nature of cases or epidemics. More than once I have known of health officers deciding that certain cases of mild smallpox were chicken-pox, forgetful of the numerous examples of the danger of an offhand decision in a matter so often difficult. One can readily forgive the mistake in diagnosis, for a case of smallpox, when seen only once, may easily be impossible to recognize, and in some cases a positive diagnosis may never be possible. But, as it is well known that some other diseases, such as chicken-pox in the adult, may present a similar difficulty, the only safe way is to take precautions suitable for the more serious disease, whenever the question arises. Failure to take this simple step, and, still worse, fixed belief in a faulty diagnosis based on incomplete examination, have had much to do with the present epidemic.

We must not forget that, even if mild, the epidemic has a very important significance. Though a mortality of 3.2 per cent., as in the four months cited, seems too small for consideration as a smallpox death rate, it assumes another aspect when we realize that it involves the deaths of 416 people. Nor is the mortality uniformly low. Dr. O. J. Porter[1] tells us that in his field of observation in Tennessee all of five or six hemorrhagic cases died, 40 per cent. of confluent cases, and 10 to 15 per cent. of discrete. Moreover, a smallpox epidemic has other evil consequences besides deaths. The general alarm and private worry; the interruption to business, often leading to personal violence or hardship; the quarantining of cities; and last, but not least, the injury from hurried vaccination—all these raise what is often called mild smallpox to the dignity of a serious epidemic. Even if none of these objections existed, the wide extent of such a disease reflects just as severely on our civilization as if we had so much itch or plica Polonica.

Epidemics of smallpox, whether mild or severe, always indicate the concurrence of a number of avoidable causes, the most important of which are lack of general hygiene, failure of special precautions with single cases, and the existence of a large number of unprotected people. The latter may result either from total failure to vaccinate, or from the use of imperfect lymph. Total lack of vaccination is a more important cause, in many places, than we are perhaps aware. Out of a large number of adult patients admitted to the University Hospital from all parts of Michigan, only 60 per cent. had scars from previous vaccination, and a considerable proportion of these were from sores so badly infected as to make the immunity a matter of grave doubt. Many suppose that, although we have not compulsory vaccination, voluntary vaccination is carried to as wide a degree as is necessary. This is evidently a most illusory view.

But I wish at this time to speak of inefficient vaccinating material and its place in the spread of smallpox. In strange contrast to the important object, and regardless of the claims vigorously made and as strenuously denied as to results, the operation of vaccination is often made with a carelessness hard to understand. The preparation of the material is left entirely to private enterprise. That much, perhaps most, of it is reliable speaks strongly for the honor and good faith of the makers, who do not claim to be actuated by other than commercial motives. Yet when we see how narrow a line separates legitimate and dishonest pharmacy, so narrow that often the same roof covers both; when we remember the exploitation of fictitious drugs, of short-weight pills and kindred matters, we can not but realize how easy it must be to put forth any kind of virus, knowing it will find a market if sufficiently advertised.

FAILURE OF MEDICAL SCHOOLS TO TEACH VACCINATION.

Not less remarkable is the almost total failure on the part of medical schools to teach the method of vaccina-

1. Johns Hopkins Hospital Bulletin, September, 1901.

tion and the phenomena of the disease so produced. Students very properly spend hours learning how to close a wound of the intestine, yet they may, and often do, graduate without the opportunity of even seeing a demonstration of vaccination. So we find that the operation is often imperfectly done, with no aseptic precautions, and inevitably giving the impression that anyone could do it as well as the physician.

As there is lack of control of vaccine material, so is there of the results, and the logical outcome is the fact that irregular, but legally qualified, practitioners give certificates of satisfactory vaccination without any operation at all.

GLYCERINATED LYMPH.

The history of glycerinated lymph furnishes striking illustrations of errors that have been observed at times since the beginning of vaccination, and I shall ask your attention to some statements regarding it. After the introduction of glycerinated lymph into the United States, I was very early struck by differences in the action of the American product as compared with that used in Europe, a difference that, on several occasions, I have called to the attention of members of the medical profession. The occurrence of a case of smallpox, about a year ago, led to a very extensive vaccination in Ann Arbor. More than 10,000 parcels of material were used, including several makes of dry points and three different kinds of glycerinated lymph in sealed tubes. One of the latter was very satisfactory, and showed all the features of an effective vaccine. Another was even less potent than the subject of the following remarks, but, not being extensively advertised, does not seem worthy of further mention. The third has been widely advertised, very extensively used, and warmly recommended. My personal experience with it, however, had been entirely unsatisfactory, and some other details seem so important that I shall speak of it at some length.

Many months before our smallpox case occurred my colleagues and myself had failed to get good results with this lymph in the primary vaccination of infants. In answer to our complaints the makers first replaced the tubes with some said to be fresher, and, that failing, sent out an agent, who claimed the failures were probably due to faulty technic. He demonstrated the proper method, without disclosing any details unfamiliar to those concerned, and without producing any improvement in the results. In our general vaccination I therefore advised against this particular lymph. This coming to the ears of the makers, the agent visited us again. He explained the later failures as due to overheating of the lymph in the cars, asserted that our experience was quite unusual, and that from all parts of the country no complaints had been received regarding the vaccine. He also arranged to have me see some patients recently vaccinated by an expert, the public vaccinator in the town where the lymph was made.

There I saw lesions like those I had seen before. Some of the vaccinations were primary, others in children who had been vaccinated from one to eight years before. In these, as in the numerous cases in the University Hospital, and in private practice, I could not find a typical Jennerian vesicle. A few small vesicles resembling the Jennerian type developed, but these did not run a typical course. The majority of the lesions, in healthy infants, as well as in unvaccinated and revaccinated adults, were small and conoidal. Sometimes, when large areas had been inoculated, the lesions were large and flatter, but these were made up of clusters of small conoidal masses. The bases of the lesions were red, the upper parts filled with a reddish, or, sometimes, yellowish serum. Sometimes the lesion was a papule of gelatinous appearance, homogeneous or sometimes crowned by a vesicle the size of a pinhead.

A very important point regarding the lesion was the time of its appearance. There was rarely any sign at all by the eighth day, though in some cases minute papules appeared at that time. More frequently it was the tenth or eleventh day, often two weeks, and in some cases three weeks, before any evidence of a "take" was present. The representative of the firm freely admitted this slow development, though he realized the danger of such a feature in vaccinations performed during epidemics.

In the further course the lesions dried on top, forming pale or dark brown scabs. This process was spoken of by the vaccinator and the agent of the firm as umbilication, but a true umbilication I have rarely seen from this lymph. In many cases the scab was very small, the papulo-vesicle remaining for many days in the same state, or slowly shrinking without undergoing proper involution. An areola was not always present, and this fact was claimed by the makers as an evidence of the safety of the virus; but in a number of cases—including 4 out of 31 in the work of the public vaccinator—in persons perfectly well and carefully vaccinated, there was a large areola, and this was often indurated. In the public vaccinator's group one sore was septically infected, as might have been expected among such material. The scabs from the cases I have described fall off at variable periods, and often without leaving permanent scars. I I have yet to see a typical scar from this particular lymph, though in some cases where the wounds became infected secondarily, scars resulted that were looked upon by those interested as evidence of efficient vaccination.

Evidently such lesions as I have described are not new in the history of vaccination. They are not necessarily the results of the glycerin, nor evidences of its beneficial action, but have often been seen and described under various names, following the use of both humanized and bovine lymph, and have always been looked upon as indicating imperfect vaccination and incomplete protection. The evidence of favor of this view is overwhelming. It forms a most interesting chapter in the history of vaccination, but does not seem necessary to review now.

Yet the makers of the lymph have been able to send out an imposing mass of literature in favor of their product, and the claims made, and the number and character of the endorsers, render the matter one of more than passing interest. The medical profession must ultimately be responsible for the quality of remedies and preventive agents used. Here, as in other cases, two things especially have limited the free expression of opinion. One is the lack of a standard, and this can be improved only by more rational instruction. The other is the indisposition to report unfavorably on any substance extensively lauded in advertisements. In the case of the glycerinated lymph I knew from private information that many practitioners and several hospitals had given it up in favor either of other kinds of glycerinated vaccine, or the old-fashioned points. I have since learned that an army medical service, after extensive use of the material, ordered complete revaccination with other virus. Yet apparently few of the disappointed vaccinators sent in complaints to the makers, and the few were easy to offset by testimonials in favor of the material. Recently, objections are coming to

light, and it appears also that the manufacturers have given up the glycerinated virus and now advocate a dry point. If so, the lesson is all the more instructive, for the quiet abandonment of a much lauded and widely used preparation does not tend to stability in practice, nor to faith in medical art. Moreover, no evidence is given that the virus now on the market is better than the glycerinated make of the same firm.

It is useful to examine some of the reports in favor of the glycerinated lymph. Some of them suggest repetitions of reports on other makes of virus, and not actual experience. On the other hand, those who report results in practice have degrees of success so great as to shatter one's credulity in the very beginning. Five hundred primary vaccinations without a failure, even 700 and 800, all successful, are proclaimed. The explanation begins to appear when another "observer" reports "vaccinia sine eruptione," but inasmuch as constitutional symptoms are claimed to be "so slight as to be scarcely noticed" the reader may wish for some of the signs by which the "take" is recognized. Perhaps the key to the puzzle is to be found in one report, in which we find in italics the statement that the writer "sold 13 tubes to a boy living in the infected district and he reported 13 successful vaccinations by himself." Shall we believe the "boy" was an authority on vaccination, or is it not more likely that both boy and professor were ignorant?

An interesting feature in the literature is that while positive statements in regard to the lymph are published, no real proof of its efficacy is given, nor is any explanation offered for the variation in action as compared with other material. The chief point, reiterated many times, is that with the lymph pyogenic infections are never encountered, and these statements are so worded one might almost come to the conclusion that vaccination without severe septic infection had never been seen before.

To be sure, one instance is reported in which the claim is made that exposure to smallpox was rendered harmless by use of the lymph. But in one case the element of chance is always so large that further testimony, with details, is desirable. The continued spread of smallpox should increase cases of apparent protection, as well as of failure, after vaccination with various lymphs, and these should be carefully observed and reported.

In the meantime it might be interesting and instructive to compare the results with those found in other countries, especially in England, where glycerinated lymph was first made widely available, or in Germany, where it is extensively used. The literature on this is not very extensive, but what there is does not tend to prove that such lymph as I have under consideration is trustworthy. It is true that Copeman, in his Milroy Lectures,[2] says the formation of the vesicle is slower than with ordinary lymph, but he also says the "pearl-like Jennerian vesicle appears on the eighth day," and he gives the photograph of a vesicle on the eighth day that leaves nothing to be desired. It is also noteworthy that in Germany those vaccinated with glycerinated lymph have to be seen between the sixth and eighth days.

During a recent visit to England I spent some time looking into the status of glycerinated lymph, and through the courtesy of Drs. Macfadyean, Blaxall and Green of the Institute of Preventive Medicine, I was convinced that the material supplied by that institute differed from ordinary fresh or dried lymph only in its greater assurance of non-septic results.

2. Lancet, 1898, May 7, 14, 21.

The vesicle on the eighth day is typical in shape, from one-eighth to three-eighths of an inch in diameter, and is usually umbilicated. The areola, which is claimed by the American maker to be due wholly to contamination with non-specific and undesirable germs, is not always present, but is usually so, and often of considerable extent. The operators at the laboratory and at the Government Animal Vaccinating Station in Lambs Conduit street have an enormous experience with all kinds of lymph, and their clear and objective record indicates perfectly normal, but unusually pure material. Such results as have been described above they held to be abortive, and, while admitting they might give protection for a few days, or even for a month, insisted they were not to be depended upon.

Besides the marked differences in the human lesion, I noticed some other differences in the action of the lymph. The vesicles on the heifers were much larger than those I saw on the animals in this country, being like those on the calves formerly used for direct vaccination in certain European cities. The British laboratory men all assert that the lesions on heifers are smaller in summer than in winter, and as it was in winter that I saw the imperfect vesicles in this country, the difference is still more suggestive.

The quantity of lymph in the tube is larger in the English product than in any I have seen in this country. The tubes are guaranteed for one week only, and, while this seems too short for our great distances, the three months' limit here is certainly unnecessarily long.

In conclusion I would submit the following:

1. Glycerinated lymph properly raised and prepared offers less danger of septic infection than any other kind of vaccine virus, and, notwithstanding the disadvantage of slow drying, it is to be preferred to dry points as made at present.

2. The peculiar features of the vaccine vesicle as known since the days of Jenner are due to the specific virus; any marked variation from them must be looked upon as evidence of imperfect protection.

3. Virus that produces an imperfect lesion should not be used, because, though it may induce immunity for a short time, may even prevent the taking of an active lymph inserted soon after it, it is likely to obscure the real condition of the subject and set up an unfounded feeling of security.

4. A knowledge of the natural history of normal vaccinia is very desirable for the physician.

5. The vaccination histories of all cases of smallpox, varioloid and chickenpox should be ascertained and recorded as fully as possible.

6. Makers of vaccine virus should give clear and explicit statements as to the quality of their products. The mere assertion of freedom from pyogenic germs covers only part of the case. Evidences of specific activity, as from use in the human being, should be given. For the makers, the results of variolous inoculations in vaccinated monkeys, as suggested by Copeman, would seem very useful and almost essential to the maintenance of a proper standard.

7. A government station for the making and testing of vaccine virus is highly desirable. This need not interfere with private enterprises, but, properly conducted, would be of great value to the latter.

8. Public vaccinators should be trained for their work, and facilities should be given for others to study the methods and clinical features of vaccination.

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THE VACCINATION QUESTION.

The antivaccination agitation, which has shown surprising strength in England during the past decade or two and more recently in Switzerland and elsewhere, is evidently rapidly gaining followers in this country. Recent events are liable to give impetus to the movement, which thus far has had but little influence here. The fatal cases of tetanus following vaccination in Camden, N. J., and in one or two other cities, will certainly have a tendency to help in this opposition. It is very probable that these deaths were not the result of vaccination at all, at least not from the virus, and it is extremely doubtful if the vaccination wound had anything to do with the fatal disease which developed incidentally afterward. But the antivaccinationists will make all the use possible of these fatalities to help along their propaganda. Like all such enthusiasts, they are not at all particular as to the absolute facts in such cases, if they can use them to advance what they believe to be a righteous cause.

There is another thing that is liable to make this antivaccination cause more popular, and that is the extremely mild type of smallpox that has prevailed the last year or two. The frightful horror of the disease in its more malignant form had a powerful influence in making people willing to submit to an operation that might otherwise be resisted for one reason or another. It was not only the fatal results that were dreaded, but the facial disfigurement that followed the victim through life. A theoretical objection based on possible results quickly vanished when death or lifelong disfigurement threatened. But with the recent and present epidemic it is different. Deaths are so rare that the disease causes practically no anxiety in this regard, and the resulting disfigurement from the pitting is so slight that few dread smallpox on this account. Under the circumstances, there need be no surprise if the antivaccinationists increase in number and influence in this country as they have in England, and succeed in influencing legislation here as they have there.

But there is another phase of the vaccination question to be considered, and one in which we as physicians are especially interested, because of its great importance, as it relates to preventive medicine. We refer to the use of unreliable virus, to which Professor Dock calls attention in our columns this week.[1] There have been hints from various parts of the country of the unreliability of much of the vaccine supplied, not by one firm only, but by several. The question of the reliability of the virus is a most serious and important one, and the time has come when the matter should be thoroughly investigated. At the present time each individual physician is compelled to depend on the virus supplied to him by the various firms that sell it, both as to its purity and efficiency.

Either there is some ground for the charge that certain houses are placing impure or unreliable virus on the market, or there is not. If there is, then steps should be taken to place the blame where it belongs. If there is no ground for complaint, then this should be ascertained for the sake of the accused firms, as well as for the satisfaction of those who have to bear the sole responsibility of using vaccine virus. Attention to the facts brought to notice, for example, by the Chicago Health Department last Januarv would possibly do away with some of the evils complained of, which may be only the result of the use of unripe virus or that which has passed its time-limit of efficiency. It was then pointed out that glycerinated vaccine could be relied upon to be sterile only after a certain period, placed at sixty days, and that its efficiency was certain only for some forty days longer. Its specific property can not be indefinitely preserved. This is a long known fact, but one possibly too often neglected by the makers and users of vaccine virus. What is needed is to have its limitations authoritatively stated to the profession, so that it may govern its conduct accordingly.

But where are we to look for this authority, and who or what body shall conduct the investigation? A few of the city boards of health have investigated for themselves and to their own satisfaction, we are told, but there has been no publication of their findings, except as above mentioned. Further, one or two investigations will not be satisfactory. Smallpox, to a greater or less extent, is prevailing all over the country and the inquiry must, therefore, be national in its scope. The National Government ought to assume this responsibility, but there is no branch of the government as now constituted that is prepared for such a work, or that has the authority to undertake it. Evidently, if it is done, it must be by the profession itself through its national body, the AMERICAN MEDICAL ASSOCIATION. We believe that the Association as now constituted can conduct such an inquiry through a well-organized committee that shall be national in its scope, fearless in exposing fraud, reliable in its findings, and satisfactory in results accomplished. It is certainly worthy of being considered. If the present mild type of smallpox should gradually, or suddenly, develop into a more malignant form, and it should be discovered too late that many of those supposed to have been vaccinated do not prove to be immune, then not only may we expect frightful results, but vaccination as a preventive measure would suffer.

1. See p. 1677.

We have more than once urged our readers to be prepared for a more serious form of smallpox to develop from the present mild one, and we still believe that this possibility should be recognized. Vaccination, if properly done with reliable material, is a preventive of this disease, and there is no fact in preventive medicine more demonstrable. Accepting these two propositions as true the duty of the profession is plain.

TYPHOID FEVER IN CHILDREN.

Twenty years ago it was generally agreed that typhoid fever rarely developed in children under the age of five years. The reason for this supposed comparative immunity was often discussed and it was generally accepted that even the fact of the simpler diet of such children causing little irritation and consequently providing fewer opportunities for the invasion of the disease, was not of itself sufficient to account for its comparative rarity. The assumption of some special protective factor as specific immunity seemed necessary to explain the infrequency of typhoid fever in young children. From more careful observation and more scientifically exact diagnosis, it has developed that this supposed immunity is only imaginary. Children of any age, except for the protection afforded by their fewer opportunities of infection, are just as liable to contract typhoid as older people.

Eichhorst[1] says that the transmission of typhoid bacilli from the mother to the child *in utero* has been frequently observed. Typhoid bacilli have been demonstrated in the enlarged spleens of dead-born children whose mothers had been sufferers from typhoid. In these cases the ordinary characteristic lesions of typhoid fever—ulcerations of the intestines, infiltration of the follicles and enlargement of the mesenteric glands—were also present. Typhoid bacilli have been found in the placental blood, and in recent years Chantemesse and Widal have experimentally demonstrated the possibility of typhoid bacilli finding their way through the animal placenta. Hence, even the very earliest age is not protected by any special immunization from the invasion of typhoid bacilli.

The false impression that the disease is rare in children is due to the fact that the symptoms in children are apt to be atypical and that they may not point to any involvement of the abdominal organs. In a large series of cases of typhoid fever recently reported[2] to the Section on Pediatrics of the New York Academy of Medicine, some of the patients presented none of the classical symptoms of the disease on admission to the hospital. Typhoid fever was rather common in New York during the latter part of August and September and it was made a routine practice to make a Widal test in every case presenting continued febrile symptoms. In a number of cases apparently of ordinary summer complaint, in some cases of lobular pneumonia and meningitis, the Widal test was positive and subsequent clinical observation seemed to justify the diagnosis of extra-intestinal typhoid fever.

In some of these very atypical cases investigation showed that the little patients had been exposed to possible infection with typhoid bacilli, or cases of typical typhoid fever developed afterwards in the family or neighborhood. The possibility of such anomalous and unsuspected cases proving a center of infection for a family or institution can, as pointed out by Dr. Koplik,[3] scarcely be exaggerated. The lesson of the cases seems to be that, in febrile affections in children, typhoid fever must always be excluded, unless the symptoms evidently point to some definitely recognizable specific type of disease. Children even at an early age are quite as susceptible as at any time in life to typhoid infection. If exposed their low resistive vitality makes them especially liable to become the victims of the disease and they may readily become foci for the dissemination of typhoid bacilli because of the unsuspected nature of their atypical affections.

1. Specielle Pathologie und Therapie.
2. From Mt. Sinai Hospital, New York City.

THE PATHOGENESIS OF EXOPHTHALMIC GOITER.

Views concerning the pathogenesis of exophthalmic goiter have undergone many changes. By some the disorder was considered a dyscrasia, due to impoverishment and deterioration of the blood. By others the symptoms were ascribed to alterations in the heart and the vascular system. Later, derangement of the nervous system—either the cervical sympathetic or the medulla—was held responsible for the condition, while recently the manifestations have been attributed to excessive functional activity of the thyroid gland, and, last of all, disease of certain glandular bodies designated parathyroid, two on each side of the thyroid gland, are accredited with etiologic significance. It appears that some functional relation exists between the thyroid gland and the parathyroid bodies. A number of experimental observations go to show that the removal of the latter gives rise to secretory and histologic changes in the former—consisting in disappearance of the colloid substance and hypertrophy of the gland—and that these can be prevented by administration of parathyroid substance. From existing evidence it is believed that removal of the thyroid gland causes trophic disturbances similar to those of myxedema in man, while removal of the parathyroid bodies causes convulsive disorders and death. The symptoms of exophthalmic goiter are essentially of nervous origin, and it must be inferred that they are brought about by the action of certain substances that find their way into the circulation as a result of the deranged function of the thyroid gland.

At the last meeting of the British Medical Association Mr. Walter Edmunds[1] presented a preliminary communication detailing experiments on dogs, in the course

3. In Discussion, Section on Pediatrics, N. Y. Acad. of Med., Nov. 14, 1901.
1. Brit. Med. Jour., Sept. 21, 1901, p. 773

of which it was demonstrated that removal of the thyroid gland and the parathyroid bodies was attended with changes in the spinal cord and the medulla. These consisted in loss of definition of the Nissl bodies, the substance sometimes appearing as fine dust, the chromophilous elements sometimes seeming fused together and having in fact undergone chromatolysis. In some of the cells the chromophilous substance was absent, only the network within the cells being visible. In some of the cells there was considerable swelling of the nucleus, and of some of the cells the processes were wanting. In fact, cells were found in every stage of degeneration. These changes are similar to those that have been described as a result of some forms of acute poisoning, and it is fair to consider athyroidea as a variety of acute poisoning, affecting the central nervous system. As the symptoms of exophthalmic goiter more nearly resemble those following excision of the parathyroid bodies than does myxedema, which is due to disease of the thyroid gland, it must be concluded that the former disease is due to aparathyroidea, the presence of parathyroid secretion being necessary for the extraction from the blood and the deposition in the cells of the Nissl bodies, which are supposed to constitute nutriment for the cells.

PARTISAN POLITICS AND OUR INSANE ASYLUMS.

The scientific treatment of insanity and care of the insane in public institutions is a matter in which some portions of our country do not shine with special brilliancy. Nor are they likely to, as long as the ideal qualifications for a physician in charge are such as indicated below. The passage is a verbatim quotation, omitting names, etc., for reasons that can be easily appreciated.

The selection of Dr. ———, of ———, as the superintendent of the hospital ———, at ———, by Gov. ——— is to be commended by every citizen of ———, and especially by every Republican in the central portion of the state. Dr. ——— deserves the appointment and is qualified to fill the position. His services to the Republican organization cover many years. As the head of the Republican county organization in 1896 he gave the party splendid service, service given at the expense of his professional practice and by personal sacrifice. Under his leadership the Republicans of ——— approached nearer a state of practical harmony than it has been [sic] before in many years, and, it may be added, has ever been since. It was hoped and was promised later that Dr. ———'s services in this connection would be rewarded by the appointment he has now received, and the promise of Gov. ——— was given and announcement made. But realization of hopes and the salary failed to come.

We have already held that it is perfectly proper for a physician to take an intelligent and active interest in politics. In fact, we hold that if more of them did even at some sacrifice on their part, it would be better for the country as well as for the profession. But we do not advocate this for the sake of spoils; least of all when it implies the bringing of hospitals for the insane into the political fighting lines. If any public or charitable institutions should be neutral politically those for the care of the insane should be, and there is no possible excuse for them being otherwise, except the desires of political corruptionists in all political parties. It is a degradation to humanitarian instincts and a misuse of public funds wrung from the taxpayer on the pretence of their being devoted to the welfare of the helpless insane; it is a steal as much as any of the Tammany performances that have led to the recent New York revolt against its misrule. The trouble is we have tolerated it so long that we do not realize this fact. Political management of such institutions means mismanagement, as is shown by abundant evidences. There are asylums where public scandals arise as frequently as revolutions in Venezuela, and others that escape only because they are less under the public eye. It is true that some political appointees do well, are good administrators, if not good psychiatrists, but in their case something besides their political services was considered in their appointment. Occasionally, even a man of eminence in the profession may be thus appointed; the pity is that his fitness can not save him if the charge of offensive partisanship is raised by an incoming administration. Each political appointment perpetuates the evil, and so long as partisanship is considered a qualification it will continue. There should be a medical public opinion on this matter to help bring about better things which will be more to our credit as a profession than are the conditions existing. Physicians should not enter politics merely or mainly for the bones that may be cast to them by politicians—who regard public charities as private plums—but for the good they can do; their participation in public affairs should be of a kind that elevates, not degrades, the profession. There is abundant opportunity for this and it will pay best in the end.

THE ACTION OF TOXIC SERUMS ON PERIPHERAL NERVES.

Peripheral neuritis is often associated with autotoxic conditions, as is the case in certain infectious diseases like tuberculosis and diphtheria. As the anatomic changes in the affected nerves are similar in many of these cases it lies near at hand to look for a similar pathogenesis. Reasoning along these lines suggested to Dopter[1] to arrange for a series of experiments in which he brought the blood serums from human patients with various diseases directly into contact with the nerve trunks of guinea-pigs. In each case a control experiment was made in the same way with normal serum; in no case did any changes develop in the nerves in the control animals. In the majority of the other experiments there developed the symptoms and the lesions characteristic of peripheral neuritis. The serums of uremic, diabetic, cancerous and other patients, all caused degenerations similar to those produced by Dopter and Lafforgue with bacterial toxins applied directly to the nerves in another analogous series of experiments.[2] The intensity of the degenerations, more or less purely Wallerian in type, varied with the serum

1. Arch. de Méd. Exp. et d'Anat. Path., 1901, xiii, 779-790.
2. Loc. cit., 507.

employed, and in the case of the same serum its action did not have the same intensity in all animals. From the results of his experiments Dopter is inclined to regard the peripheral neuritis of toxic states as due to the direct action of the toxic products in the circulating blood upon the elementary fibers of the nerve trunks.

LONGEVITY IN IRELAND.

It is said, on the authority of the registrar-general for Ireland, that 20 per cent. of the population of that island die of old age, and it would appear that that is not very rapidly fatal as there were living there in 1900, 212 men and women over 100 years of age. If these are facts it may be a question whether in some points of view they are so much a matter for unmixed satisfaction as might at first appear. Considering life as a blessing in itself, and most normal individuals hold this opinion practically if not theoretically, the showing is eminently satisfactory. Nevertheless a high percentage of deaths from old age must necessarily imply a much larger proportion than one-fifth living past the period of active usefulness, and this by so much lessens proportionately the active and productive part of the population. Taking account of the emigration, of the drafts on the young man for military service, which has always been favored by the Irish, and of this special vitality and longevity, it would seem that Ireland must be a country of old people par excellence. The longevity also indicates that life must be taken easy over there; nothing shortens it more than worry. Possibly the strenuous living Hibernians have come to this country where they can work off their energies in generally getting on in the world. Another corroborative fact as to the general well-being of the Irish and the comparatively small proportion of young and productive individuals is the reduced birth rate, which is a usual accompaniment of thrift and prosperity, and which is said to be lower than in any other portion of the British Isles. Taking all the data together and estimating their significance, it would seem that we ought not to consider Ireland a bad country to live in, but must infer that possibly the green island averages fairly well among the other parts of the earth.

THE OHIO DECISION ON OSTEOPATHY.

It would appear from the newspaper comments that the alleged great victory of osteopathy in the recent Ohio decision,[1] which holds that its practice is comprehended in the statutory definition of the practice of medicine, may prove a boomerang after all. The decision pronounces against discrimination, and therefore none in their special favor can be allowed. As they are not authorized to administer drugs or perform surgical operations, they may be exempted from examination in those departments, but there would be no good excuse for their being relieved from the examination required in other branches. The fact that the Ohio medical practice statute does not specify the number of years that a candidate for license to practice medicine must have attended lectures, leaving that to the board, while this is specified for the osteopaths, is considered as discrimination by the court and therefore void. This does not exempt the osteopaths from examination; it can not create another discrimination in their favor. The law is pruned down, therefore, as regards this point by the decision, and that the individual involved in the case goes free is a matter of no importance. The Ohio State Board is said to be well satisfied with the court's findings; it makes the osteopaths subject to the same rules as all other practitioners, except as regards their special exclusive dogma and practice. The board can compel them to show that they have a satisfactory knowledge of anatomy, physiology, pathology, chemistry "and such other subjects as the board may require." On the whole, the decision seems to have disposed of only a very unimportant feature of the law that was probably introduced only as a blind or for the benefit of the so-called osteopathic colleges which are springing up in various parts, and to have left its essentials untouched. It, moreover, by implication rules out discrimination in favor of any irregular practitioners and that is just what will not suit them. The rejoicing of the osteopaths may be found by them to be a little premature and there will probably be wailing and gnashing of teeth again very soon. It does not appear how they can help themselves, however, when the State Board summons them to undergo examination unless the legal mind finds some other flaw in the law in their favor.

1. See p. 1690.

STRONGYLOIDES INTESTINALIS IN THE UNITED STATES.

In connection with ankylostomiasis attention was called[1] to the importance of careful examination of the feces in cases of anemia and intestinal disturbances. The injunction to examine the feces for these parasites should be extended to other cases as well; for it appears that when this is done instances of intestinal infection with animal parasites are sure to be discovered sooner or later of which the profession of this country now know little or nothing, because they are not supposed to ever occur here. This is illustrated by the reports of Strong[2] and Thayer[3] of cases of diarrhea associated with the presence of strongyloides intestinalis in the Johns Hopkins Hospital. Both of these writers give careful reviews of the literature. In the first case, observed by Strong, the parasite was discovered in a patient with amebic dysentery and abscess of the liver. In Manila Strong had the opportunity of observing four additional cases. Thayer adds two more from Baltimore. As three cases were recognized in three years in one hospital, all of which probably originated in Maryland and Virginia, Thayer suggests that this parasite may be more frequent than has been supposed. There is some doubt as to the pathologic importance of strongyloides intestinalis. Manson, for instance, states that later investigations since its discovery in Cochin China, by Normand in 1876, while clearing up its interesting natural history, have robbed it of any claim to pathologic import. Strong holds that the parasite while not particularly dangerous is not harmless, causing an intermittent diarrhea and intestinal catarrh. But the discovery of strongyloides intestinalis in this country em-

1. JOURNAL, Nov. 30, 1901, p. 1466.
2. Johns Hopkins Hospital Reports, 1901, x, 91-132.
3. Jour. Exp. Med., 1901, vi, 75-105.

phasizes again the possible occurrence to a greater extent than suspected of ankylostomum duodenale (uncinaria duodenalis) because the geographic distribution of the two forms seems to be about co-extensive. In searching the feces for the ova of the ankylostomum, the observer sometimes is astonished "by seeing a small, snake-like animal suddenly rush across the field of the microscope," and on closer examination this animal is found to be the strongyloides. Enough has been said to show the desirability of careful examination of the feces in both hospital and private practice in order to enable the physician to fully control the situation.

Medical News.

CALIFORNIA.

Crusade Against Illegal Practitioners.—On December 6 the State Board of Medical Examiners swore out warrants against 18 illegal practitioners.

Personal.—Dr. Frank D. Walsh, for four years in charge of the hospital of the Hobart Lumber Company, has located in Santa Rosa.——Dr. William C. Hassler has been appointed chief sanitary inspector of San Francisco, to succeed Dr. William P. Chalmers.

Reports of Communicable Diseases.—The city council of Oakland has passed amendments to its ordinance requiring reports of certain diseases, as follows: "Every physician in the City of Oakland shall immediately report to the Health Office, in writing, every patient he shall have sick of typhus or ship fever, yellow fever, Asiatic cholera, smallpox, bubonic plague, diphtheria, scarlet fever or scarlatina, chicken-pox, typhoid fever, malarial fever, or pulmonary tuberculosis accompanied by expectoration; and report to the Health Office every death from any of the said diseases immediately after it shall have occurred. Every householder in the City of Oakland shall immediately report in writing to the Health Office the name of every inmate of his or her house, whom he or she shall have reason to believe sick of typhus or ship fever, yellow fever, Asiatic cholera, smallpox, bubonic plague, diphtheria, scarlet fever or scarlatina, chicken-pox, typhoid fever, malarial fever, or pulmonary tuberculosis accompanied by expectoration, and report every death occurring at his or her house from any of the said diseases."

COLORADO.

Dr. William W. Kenney, formerly house surgeon at St. Francis Hospital, Colorado Springs, has entered the Medical Corps of the Army and has been ordered to Fort McDowell, Cal.

Morbidity.—During November, 130 cases of diphtheria, 315 of scarlet fever and 130 of smallpox were reported to the State Board of Health. Compared with October, November shows an increase of 12 cases of diphtheria, 136 cases of scarlet fever and 76 cases of smallpox. The increase is due to the failure at different places to recognize the first case, and the resulting failure to adopt proper measures.

New Regulations.—The State Board of Health has directed all health officers to notify all physicians practicing in their jurisdiction that on and after Jan. 1, 1902, every case of typhoid fever must be reported; and that on and after Jan. 1, 1902, no dead body can be lawfully disposed of without first securing a burial permit. Blanks for both these purposes will be sent to health officers before January.

FLORIDA.

Personal.—Dr. Theodore Turnbull, Monticello, has moved to Jacksonville.——Dr. Louis S. Oppenheimer, Tampa, who has been seriously ill for several weeks, is now convalescent.

Hospital Burned.—The railway hospital of the Flagler system, at St. Augustine, was destroyed by fire, November 27, entailing a loss of $10,000, covered by insurance. There were twenty-four inmates in the various wards, but they were removed without loss of life.

Health of Florida.—The twelfth annual report of the State Board of Health shows that during 1900 there were 9610 births and 5949 deaths. The population of the State is 528,442, which gives a birth rate of 17.99 and a death rate of 11.24 per 1000. The death rate the previous year was 11.67, while the birth rate was 15.50; hence the figures for 1900 are encouraging as showing an advance in the birth rate and a slight decrease in the number of deaths. The six principal causes of death were: Consumption, 493; malarial fever, 330; pneumonia, 316; nephritis, 143; influenza, 133; and paralysis, 111. Out of the 5949 decedents 176 were from old age, being beyond eighty years; 143 from gunshot wounds, and 203 from other violent causes of death, such as drowning, burns, lightning, etc.

ILLINOIS.

St. Clair County Smallpox Hospital, East St. Louis, was formally opened November 21.

Hospital Enlarged.—The work of enlarging St. Anthony's hospital, Rock Island, is already under way. The addition will cost about $30,000.

Smallpox.—Smallpox is prevalent at Posey, where there are four well-developed cases, and at Mount Pulaski, where the existence of 14 cases has caused the public schools to be closed.

Hospital at Rock Island Arsenal.—One of the items of the estimates submitted to Congress by the Secretary of the Treasury is that of $135,000 for a new hospital building and for moving and reconstructing a storehouse at Rock Island Arsenal.

The Gordons Are Doctors.—The family tree of Dr. James Gordon, who died at Greenville, in 1895, shows that 13 of his descendants are physicians; that 7 are studying medicine, that 5 are destined to be physicians, and that two doctors have married into the family.

Personal.—Dr. William A. Gray, Milledgeville, has moved to Freeport.——Dr. Bert Caldwell, Effingham, has located in East St. Louis.——Dr. Arista D. Lloyd, Meyer, has succeeded to the practice of Dr. Jesse H. McIntosh, De Witt. The latter has moved to Hope.——Dr. Henry Taphorn, assistant county physician of St. Clair County, has resigned.

Decision Regarding Smallpox.—In the case of Granite City against the County of Madison, growing out of an epidemic of smallpox, the expenses of which aggregated $12,000, and in which the county tendered $3800 in gold as its share of the expense, and the Granite City council brought suit to make the county pay all the expenses, the circuit judge held that the county was liable for physicians' bills, necessary food, shelter and nursing. All items incidental to quarantine, such as guards, coal bills, boarding, pesthouse, supplies, etc., were charged to the city in the decision.

Chicago.

Dr. Frank Billings will deliver the Shattuck Lecture at Boston next June. His subject will be on "Changes in the Spinal Cord in Pernicious Anemia."

New Buildings Needed at Dunning.—The president of the County Board estimates that for $500,000 he could replace the present old and inadequate buildings at Dunning by new ones, built in modern style that would be a credit to the county.

Smallpox.—The almost marvelous exemption of the city from smallpox still continues. This is in striking contrast to the conditions in nearly all of the large cities of the country, if not of the world, outside of Germany, in which smallpox has become practically extinct through its efficient vaccination and revaccination system.

Weekly Bulletin.—Public health conditions as indicated by the mortality figures of last week, remain substantially unchanged. There were 18 fewer deaths reported than during the previous week, and the annual death rate was 13.39 per thousand, as against 13.93 for week ended December 7. The death rate among those under 5 years of age is gratifyingly low, and the previous excess among those over 60 was materially decreased last week. Pneumonia headed the list with 77 deaths; consumption was next with 48 deaths.

Influenza and Pneumonia.—There is no abatement, but the contrary, in the spread of influenza, the perniciously active first lieutenant of pneumonia, which, as shown in the March Monthly Bulletin, has, during the last dozen years, displaced consumption as the "captain of the men of death," to apply the phrase of John Bunyan. Both the pneumonia and the influenza germs continue to be found in increasing numbers in the laboratory examinations, and the closing forty-eight hours of the week ending December 7, with the sudden and violent change in temperature, afford the conditions best calculated to

develop these germs into activity in the systems of those in whom they had already lodged.

INDIANA.

Typhoid fever exists in Mount Vernon. The health officer states that 25 cases have been reported to him, mostly of school children.

Smallpox is reported as follows: Francisco, 3 cases; Oakland City, 1 case; Mackey, 1 case; Lincoln City, about 75 cases; Anderson, 1 case; Sidney, 26 cases; Pierceton, 3 cases; Packerton, 5 cases; North Madison, 27 cases; Tennyson, 8 cases; Gentryville, several cases, and Tell City, 5 cases.

Action of State Medical Board.—At a special meeting of the board, December 10, the license of Harry S. Kiskadden, Huntington, was revoked, as he was shown to be a non-resident of the state. The board also refused to recognize the Curtis Physio-Medical Institute, Marion. Two cases were continued. The board will hold an examination for license to practice, January 14. About fifty have already applied.

KANSAS.

Report System.—The Topeka Board of Health use the postal card system for reports.

Dr. Charles Hammond, Topeka, has been arrested for failing to report contagious diseases promptly.

Osteopaths to Be Examined.—It has been decided that the State Board of Registration has a right to examine osteopaths.

Smallpox in the State.—Smallpox is not as prevalent now as at this time last year. The following is the detailed statement of all cases reported during November: Arkansas City, 3; Barton County, 9; Chatauqua County, 4; Douglas County, 14; Fort Scott, 25, with 1 death; Girard, 12; Marysville, 6; Meade, 1; Ness County, 7; Phillips County, 3; Shawnee County, 3; Stafford, 19; Topeka, 8; Wellington, 1; Wichita, 6 cases, with 1 death, and Washington County, 16 cases. Total number of cases, 137, with 2 deaths.

MARYLAND.

Naval Academy Changes.—Passed Assistant Surgeon W. H. Garton has been detached from the Naval Academy at Annapolis and ordered to the New York Navy Yard. Passed Assistant Surgeon J. B. Dennis has been ordered to the Naval Academy.

War on Tuberculosis.—The State Board of Health is actively prosecuting its intention of making war on tuberculosis. The secretary has been directed to have an interview with the governor hoping that the legislature will authorize him to appoint a commission to study the means of dealing with the disease most effectually. A hope is even held out that the state may begin this winter the treatment of incipient cases of consumption in public sanatoria.

Abolition of State Aid to Medical Schools.—It is announced that the Board of State Aid and Charities will recommend to the legislature the abolition of all free scholarships and the withdrawal of all appropriations to medical schools. It is claimed that some of the institutions have been receiving aid for 60 years and that the state appropriation for one scholarship to each county and one to each legislative district in Baltimore is simply a raid on the treasury without due compensation.

Special Tax for Insane.—Dr. J. Clement Clarke, of Springfield Asylum for the Insane, proposes the levying of a special tax in this state for the support of the insane. This would involve an increase in the tax-rate of about 3 cents. The present system provides that each county and Baltimore shall pay $150 per year each for insane patients. Dr. Clarke proposes to collect all the insane from the almshouses and jails at Springfield, where there is plenty of land for building purposes. At present there are 405 patients at Springfield. Both asylums are crowded.

Baltimore.

Dr. Daniel C. Gilman has been made president emeritus of the Johns Hopkins University.

Mayor's Veto Sustained.—In the first branch of the city council the mayor's veto on the Municipal Hospital ordinance was sustained. It is probable that the matter will be taken to the legislature.

Baltimore Mortality.—For the week ended December 7 there were 180 deaths, more than half being colored. Typhoid fever caused 5; diphtheria, 1; consumption, 26; cancer, 7; heart disease, 12; pneumonia, 22, and Bright's disease, 13.

Deaths in Baltimore for the week ended December 13, were 189. Pneumonia caused 25, consumption 22, cancer, heart disease and inanition each 11, Bright's disease 10, accidents 9, paralysis 6, diphtheria and suicide each 3, typhoid fever and homicide each 1.

Veto of Ordinance Against Infections Hospital.—The mayor of Baltimore has vetoed the ordinance removing the Infections Hospital Commission and providing that the hospital shall not be erected on the ground purchased a short time ago by the commission for the purpose. All the schools of medicine joined in urging the great need of such a hospital and in expressing the opinion that there is no danger of infection. The mayor points out the injustice done to leading physicians of the city composing the board, who have given their time and services in selecting a suitable site. The board is bound by contract for $20,000 for the above site.

MICHIGAN.

Illegal Practitioner Convicted.—Robert A. Knight, Center Line, pleaded guilty, December 6, of practicing medicine without having registered, was fined $25 and agreed to leave the county.

Michigan Doctors.—Michigan has 4350 physicians who have received certificates under the law of 1899. The population of the state being 2,188,650, the ratio of physicians to laity is as 1 to 503.

Smallpox.—Manistee now stops all trains outside the city limits and has passengers examined as smallpox suspects.——In Breen Township 3 cases have developed, in one of the Ford River Lumber Company's camps.——In Reed City, 5 cases are reported.——At Muskegon 12 cases have been reported and the charge is made that many light cases are being treated privately.

Mortality in Michigan During November.—There were 2454 deaths returned to the secretary of state for the month of November, corresponding to an annual death rate of 12.5 per 1000 population. This number is 94 less than the number returned for the preceding month and 7 less than the number of deaths recorded for November, 1900. Of the total number of deaths returned to the department, 346 were infants under one year of age, 177 were children aged one to four years, both inclusive, and 659 were deaths of persons aged sixty-five years and over. Important causes of deaths were as follows: Pneumonia, 206; pulmonary tuberculosis, 137; other forms of tuberculosis, 29; typhoid fever, 79; diphtheria and croup, 59; scarlet fever, 27; measles, 6; whooping cough, 8; diarrheal diseases of children under two years of age, 42; influenza, 11; cancer, 127; accidents and violence (exclusive of deaths at Wabash wreck), 188. Two deaths from smallpox and two from anthrax are also reported.

MISSOURI.

Dr. Jackson's Estate.—The estate of the late Dr. J. P. Jackson, Kansas City, who died intestate, is valued at $10,000, and the president of the First National Bank has been appointed administrator.

The Alumni of the Medical Department of Washington University held, on December 10, a symposium on tuberculosis, and special emphasis was made upon the necessity for early diagnosis and limitation of the disease by enforcement of sanitary laws.

City Bacteriologist and Pathologist for St. Louis.—As one of the results of the city's recent antitoxin trouble, a bill creating the office of city bacteriologist and pathologist will soon be introduced into the municipal assembly. The bill will be drawn by the medical members of that body.

Smallpox.—The 12 patients in quarantine at the St. Joseph pest-house, which is a dilapidated shack on the river front with tents as annexes, complain of accommodations and food, and a subscription for their relief has been started by the citizens.——Independence has 16 cases of smallpox.——In Kansas City 3 cases were discovered, December 9, which were said to have been under the care of a prominent physician, who had not reported them.——At Enoch schools have been suspended on account of 3 cases of smallpox.——At Chitwood 15 cases have been reported.

Fumigation Plus Cleansing.—The subject of tuberculosis is receiving a large share of attention in St. Louis. The original bill for registration and fumigation as presented by the Health Department did not pass the Council, because it was deemed oppressive and futile. A new bill has been agreed upon by members of the board of health and representatives of the

St. Louis Medical Society, and will shortly be offered. One of the provisions is that when requested by the attending physician, the Health Department shall cause the apartment occupied by the tuberculous patient to be thoroughly cleaned and not merely fumigated.

State Sanatorium for Tuberculosis.—At a recent meeting of the City Hospital Alumni, Dr. Homan offered the following resolutions, which were adopted:

WHEREAS, The provisions by state government of sanatoriums for the reception and care of tuberculous persons has become an acknowledged necessity for the better protection of the public against tuberculosis in its various forms; and,

WHEREAS, Several states already possess such sanatoriums, while Missouri, although the fifth state in the Union in order of population, has taken no steps toward providing for the establishment of such an institution; therefore, be it,

Resolved, That the Society of the City Hospital Alumni recognize the urgent necessity for an adequate institution designed for the exclusive care and treatment, both hygienic and medical, of tuberculous persons in the State of Missouri, the said institution to be erected and maintained by the state government; and that this Society shall at once, by correspondence and otherwise, seek to enlist the active co-operation of other medical societies and bodies, and of the public press throughout Missouri to the end that a sanatorium, commensurate with the importance of the object sought, be authorized by legislative action, the same to be erected in some suitable location in the mountainous part of the state.

MONTANA.

St. John's Hospital, Helena, will be ready for occupancy, January 1.

Contract Physicians.—The County Commissioners have been awarding contracts for medical services for the county poor to the lowest or to sufficiently low bidders. In Yellowstone County $300 is paid; in Choteau County, $1260; in Custer County, $650; Meagher County, $300, and Beaver Head County, $600.

State Board Sustained.—The action of the State Board of Medical Examiners in refusing to grant William F. Clarkson, Butte, a license to practice medicine in the state was sustained. The case came before the District court on Clarkson's appeal from the action of the State Medical Board in refusing to issue him a license on the ground that his examination was entirely unsatisfactory and the board did not consider him a safe person to be allowed to practice.

NEBRASKA.

Omaha has 52 cases of smallpox under quarantine.

The State Board of Health met at Lincoln, December 6, and issued licenses to five physicians and two osteopaths.

Dr. A. N. Loper, who for the past seven years has been superintendent of the Nebraska Sanitarium, Lincoln, has accepted a similar position in the St. Helena Sanitarium, St. Helena, Cal.

The Smallpox Situation.—The reports to the State Board of Health indicate that the disease is being effectively fought in the various communities where it has broken out. The counties are organizing local boards of health and where they had not already formulated quarantine rules are adopting those recommended by Dr. Towne and the secretary of the state board. The disease is well under control in Long Pine and other places in that section of the state, but the danger is by no means passed. A strict observance of quarantine rules is essential.

NEW JERSEY.

Increase of Cancer.—The State Board of Health's report shows that in the year ended October 31 there were 1001 deaths from cancer, or twice as many as from smallpox, diphtheria, scarlet fever and typhoid fever combined in the state.

Library House-Warming.—The house-warming of the William Pierson Medical Library Association took place in the Stickler Memorial Library building, Orange, December 4. There was a large attendance of prominent physicians from the Oranges, Newark and surrounding towns and cities and other invited guests. Fifty-four members and a large number of applicants attended the meeting. The president, Dr. Thomas W. Harvey, Orange, opened the meeting with an address of welcome, and then introduced Dr. Charles McBurney, New York, who delivered a lecture on "Aseptic Surgery." At the conclusion of the address a collation was served.

Tuberculosis Sanatorium.—The Camden County Medical Society has passed the following resolutions:

WHEREAS, Tuberculosis is a constant factor in the mortality of the state, causing each year more deaths than typhoid fever, scarlet fever, diphtheria, croup, measles, whooping cough and smallpox combined, and amounting to about 11 per cent. of the death-rate, and,

WHEREAS, Tuberculosis is an infectious, contagious disease, communicable through air, food and personal contact; and,

WHEREAS, Science has demonstrated that the disease is preventable, and in a large percentage of incipient cases, curable, and that,

WHEREAS, The plan of segregating tuberculous subjects, the incipient cases in camps or sanatoria and the incurable cases in hospitals, has been tried abroad and in several states and found to offer the best means for the cure and eradication of the malady and the protection of the public health; therefore, be it

Resolved, That this Society recommend to the representatives of Camden County in the Legislature the enactment of a law providing for the establishment of a sanatorium, under State supervision, for the treatment of incipient cases of tuberculosis, which shall afford the best facilities for the personal care of the subject and the cure of the disease;

Resolved, That the authorities of each county be authorized by enactment to establish hospitals for the care and treatment of incurable cases, since the best results can be obtained only from treating the incipient cases apart from the incurable.

NEW YORK.

Onondaga County Hospital.—The hospital at the County house, Syracuse, has been completed, and the patients in the old building transferred to it. It is a model building, and $31,000 has been expended on its construction and equipment.

Medical Course Extended.—The Cornell Faculty of Arts and Sciences met December 11 and decided to extend the course for the A. B. and medical degrees from six to seven years. Hereafter no art student will be allowed to register in the medical course unless in the beginning of the senior year. Two years of the seven will be spent in the New York department and five in Ithaca.

Endorses Vaccination.—The Rochester Pathological Society, at a recent meeting, adopted resolutions declaring that smallpox was more than usually prevalent, publicly affirming its belief in the effectiveness of vaccination as affording protection against smallpox; urging the prompt vaccination of all unvaccinated children, and the revaccination of all persons whose protection has not been tested by revaccination within the last five years.

Consumptives Barred.—The Board of Health of the village of Liberty, fearing that the popularity of that place as a resort for consumptives might interfere with public health, and so with its popularity as a summer resort, has passed an ordinance putting tuberculosis in the same class as smallpox, scarlet fever and diphtheria and imposing heavy fines on any one maintaining a "hospital, pest-house or sanatorium" for consumptives inside the village limits.

The New York County Medical Association and Society.—New York County Medical Association, at its stated meeting on December 16, adopted the following preamble and resolution:

WHEREAS, The following resolution has been received from the Medical Society of the County of New York: *"Resolved*, That the President of the Medical Society of the County of New York appoint a committee of five, of which he shall be chairman, provided a similar committee be named by the New York County Medical Association, to confer with that body with reference to a union of the two organizations; and that this committee be requested to report to the Society at the stated meeting in January, 1902, or sooner, in order that this Society may, if desirable, make a recommendation to the Medical Society of the State of New York at its next annual meeting;" and,

WHEREAS, The subject of union of the medical profession in this state, as expressed in the foregoing resolution as presented by the Medical Society of the County of New York, is wholly a state question; and,

WHEREAS, The published charter and by-laws of the New York State Medical Association do not allow its county associations to act independently on state questions;

Be It Resolved, That we heartily favor a union of the profession in one state medical body, and respectfully suggest that the Medical Society of the State of New York to appoint a committee to consider this question; and,

Be It Further Resolved, That the New York County Medical Association request the New York State Medical Association to appoint a committee of conference in case the Medical Society of the State of New York shall appoint a similar committee.

Buffalo.

Dr. Arthur W. Hurd, superintendent of the Buffalo State Hospital, has been granted $200 for his examination of Czolgosz.

Dr. G. F. Mills, formerly of the house staff of the Erie County Hospital, has been appointed on the staff of the Manhattan State Hospital, New York City.

State Commissioner in Lunacy.—It is reported that Governor Odell has appointed Hon. Daniel Lockwood as State Commissioner in Lunacy, a position which pays $5000 and $1200 for traveling expenses.

Marine-Hospital for Buffalo.—In his report to Congress, Secretary of the Treasury Gage notes that the Surgeon-General

of the United States Marine-Hospital Service recommends an appropriation for the establishment of a marine-hospital at Buffalo, and approves the recommendation.

Smallpox.—Many stores and factories are still continuing in the compulsory vaccination of their employes. The health authorities made an inspection of all inhabitants on Laepere Street (where most cases are at present) and all those whose vaccination did not take or who had not been vaccinated were compelled to comply. The Street Railway Company has undertaken to fumigate the street cars and all the employes are undergoing vaccination.

New York City.

Dr. **William B. Pritchard** has been appointed consulting neurologist to the S. R. Smith Hospital, New Brighton, Staten Island.

Dr. **Rowland G. Freeman** has been elected chairman of the Section on Pediatrics of the Academy of Medicine, and Dr. David Bovaird, Jr., secretary, for the ensuing year.

An epidemic of scarlet fever has broken out in the Hebrew Orphan Asylum, Brooklyn, where 315 boys are housed. Ordinarily 250 of the children attend school in the neighborhood, but this has been stopped and the asylum placed under quarantine.

Dr. **James W. Bowden**, a physician living at Yonkers, but doing business in New York City as medical examiner for one of the life insurance companies, while engaged in his professional work in this city suddenly lost his identity. He had just made a call upon a private patient, and had insisted upon calling in consultation a surgeon. He left the patient's house saying that he would return with the surgeon in two hours, and when this time had long passed an effort was made to discover his whereabouts. The police were finally notified, and a large force of detectives searched for him, but two nights and two days elapsed from the time of his disappearance before they discovered him. It is reported that when found his mind was almost a complete blank, but that it is expected he will soon recover completely.

Deportation of Consumptives.—The first case to test the constitutionality of the Treasury ruling, that consumptives shall be prevented from landing in this country as immigrants, has just come up. One Thomas Boden, and his family, arrived here on November 9, and relatives from Philadelphia guaranteed that they would not become a public charge. The authorities refused to admit Mr. Boden to the country because the examination made by the Marine-Hospital physicians showed him to be suffering from pulmonary tuberculosis. He was ordered deported, but a lawyer obtained a writ of habeas corpus, and Mr. Boden is now a government patient in the Long Island College Hospital. The act of Congress under which he is detained was intended to exclude idiots, insane, paupers, criminals and "persons suffering from a loathsome or a dangerous contagious disease."

OHIO.

Smallpox at Mingo Junction is said to be under control.

State Board Examination.—The State Medical Board examination was held in Columbus, December 10, 11 and 12. There were 32 applicants.

Massillon State Hospital.—The annual report of the Massillon State Hospital has been filed. The trustees recommend the purchase of 85 acres of land at a price not to exceed $200 per acre, and also ask appropriations for a hospital building, an infirmary and seven cottages. The estimates for 1902 are $321,000 and for 1903, $359,700. The per capita cost, including officers' salaries, was $141.81.

Anti-Tuberculosis Committees.—The president of the Ohio Society for the Prevention of Tuberculosis has announced the following committees: Legislation; auxiliary societies; public institutions; sanatoria; lecture bureau; workshops and factories; publication; animal tuberculosis and sick benefits. He also appointed a special committee to investigate and report on the prevalence of tuberculosis in cities.

PENNSYLVANIA.

Marine-Hospital at Pittsburg.—Congressman Dalzell has introduced a bill in Congress appropriating $100,000 for the purchase of a site and the building of a marine-hospital in Pittsburg.

A physician of Spring City was fined $25 and costs, December 7, for alleged failure to report to the Board of Health a case of smallpox he was treating. He will appeal from the decision of the Burgess.

Want Fees Advanced.—The physicians of Sharpsburg and Etna are making an organized effort to obtain adequate fees. At present the fee-bill is 50 cents for office calls and $1 for visits. These fees should, in their opinion, be doubled.

Smallpox.—An epidemic exists in Schuylkill County; at Auburn there are 25 cases and 6 at Port Clinton, 1 at St. Clair and several at Tamaqua.——Two cases are reported from Rosato, near Bangor.——Near Hoffer, Snyder County, there are six cases.——Plymouth, where the disease has existed for a year, and where there have been 22 deaths, has been quarantined by Wilkesbarre.——Lebanon has 24 cases.

Philadelphia.

Wills Eye Hospital, under control of the Board of City Trusts, is to have a change of management, Superintendent Richard H. Lytle having resigned.

State Medical Board Examinations.—The State Medical Boards of Examiners, regular, eclectic and homeopathic, examined applicants for license to practice medicine this week.

Pathologic Exhibit.—The Philadelphia Pathological Society will hold a special annual exhibition meeting, January 9. Many fine bacteriologic and tissue specimens, both microscopic and gross, will be shown.

New Laboratories.—To help in building medical laboratories for the University of Pennsylvania, Dr. R. V. Mattison recently subscribed $25,000. To make room for the buildings, the Veterinary School is to be moved.

The North Branch of the Philadelphia County Medical Society held a meeting, December 10. The program consisted of a symposium on variola, varicella and vaccinia. Drs. Joseph McFarland, Jay F. Schamberg, William M. Welch and Judson Daland presented different phases of the subject, and the chief medical inspectors, vaccine physicians and other authorities engaged in the discussion.

Contracts Awarded for Blockley.—Dr. John V. Shoemaker, president of the Board of Charities and Correction, announces the award of contracts for Philadelphia Hospital (Blockley) work as follows: A maternity house, to be completed in 125 working days, at $9500; a children's hospital, completion required in 175 days, at $33,275, and a hospital for contagious skin diseases, completion in 175 days, at $33,175.

Vaccination.—The official report of the Camden, N. J., Board of Health, relative to 11 cases of tetanus following vaccination in that city, is gratifying to the profession at large, and should be especially so to the physicians as well as to the laity of Philadelphia at this time of an imperative need for vaccination. The investigation established the fact that all virus used in Camden was free from tetanus, as shown on examination by the state bacteriologist; by tests on rats by Cooper Hospital physicians, and by the fact that in none of the cases did tetanus, which was acute, occur until 3 or 4 weeks after vaccination. In Philadelphia, within the past three months, 700,000 to 800,000 persons have been vaccinated with the same kinds of virus as those used in Camden and not a case of tetanus has occurred. The cases of tetanus are ascribed in the report, to a long period of dry weather, with high winds, and to a lack of proper care on the part of patients to the vaccination wounds.

The Smallpox Situation.—According to the official report more new cases of smallpox developed in the city in the past week than heretofore. In the week ended November 30, the next highest number, 113, occurred; last week 125, as against 72 for the intervening week. Eight deaths occurred the past week. The total number of cases reported since the beginning of the year is 965, deaths 127; cases under treatment at present, 349. To stamp out the disease, under the direction of Dr. W. M. Angney, assistant medical inspector, an extra corps of about 60 physicians has been organized, and they are making a house-to-house canvass. This corps, appointed upon the recommendation of the deans of the medical colleges, is in addition to the 33 permanent regular physicians who vaccinate in their offices only. The extra corps has made, in the week's work, about 11,000 vaccinations. They are paid by the city. In view of some apprehension regarding tetanus, the physicians are directed to use careful technique and to instruct patients in the protection of the wounds. Because of the small capacity of the Municipal Hospital, it is necessary to treat many cases in their homes. Such houses are quarantined and guarded by police or special quarantine officers.

TENNESSEE.

Cornerstone Laid.—The cornerstone of the new laboratory for Meharry Medical College, Nashville, was laid, December 3.

Dr. William D. Haggard, Jr., Nashville, who was operated on for appendicitis last week by Dr. L. S. McMurtry, of Louisville, Ky., is improving satisfactorily.

Doctors Won.—In the suit of M. Cohen against Drs. William B. Rogers and Frank D. Smythe, of Memphis, for $15,000 damages for the loss of an arm, the jury returned a verdict for the defendants, December 10.

Right of Way for Doctors and Ambulances.—An ordinance was passed, December 5, by the Legislative Council of Memphis, and approved by the mayor, which grants "the right of way to all such persons who practice for the cure of the sick and the injured, and all such vehicles which are exclusively used for the transportation of the sick and the injured."

Smallpox.—During November 3 cases were treated in Chattanooga.——There are 4 cases in the Weakley County pesthouse.——Dr. John E. Parks, Somerville, physician of Fayette County, is ill with the disease.——In Johnson's Grove, Crockett County, there are 4 cases and many exposures.——Jackson County has 5 cases; Lauderdale County, 3 cases; Shelby County, 8 cases; and Fayette County, 8 cases.

CANADA.

University Quarantined.—Ottawa University is quarantined owing to two or three cases of smallpox having developed among the student body, which numbers about 600. There have been over 90 cases of smallpox at the capital since the beginning of the outbreak.

Physicians in Lumber Camps.—Dr. Hodgetts, special sanitary inspector to New Ontario, is at the present time in Toronto. He reports that fifty lumber firms and companies have appointed physicians to look after the men in their shanties in the lumbering and mining districts to the north.

Personal.—Dr. G. E. R. McCartney left Toronto on December 7 for New York to assume his duties as house surgeon of the New York City Hospital, a position which he will hold for the next two years.——Dr. James G. Ross, London, Ont., has removed to Chicago to practice.

Appointment.—Prof. J. T. Ronald has been appointed public analyst at Montreal. The work of protecting the public against impure and adulterated foods, drugs, etc., is under the supervision of the Department of Inland Revenue at Ottawa, with a chief analyst in charge. The dominion is divided into districts, and each month officers purchase in the open market samples to be analyzed, and it is thus that offenders under the adulteration act are dealt with.

New Order of Trained Nurses.—For some time there has been considerable opposition on the part of the Roman Catholic church authorities in Montreal to Catholics employing Protestant trained nurses and to obviate this Archbishop Bruchesi has addressed a pastoral letter to the Catholic clergy ordering the establishment of an order of Catholic trained nurses, to be known as the Sisters of Hope, whose duty it shall be to attend the Catholic sick.

Osteopath Convicted.—The case of the Toronto osteopath in whose office a young lady recently died after undergoing treatment for goiter, came up before the police magistrate last week. The Crown had secured the books of the irregular and from these it was ascertained that other than osteopathic diseases were commonly being treated by these "practitioners." The magistrate seemed to have no faith in osteopathy and stated that he would impose a fine of $25 and costs.

Physician Loses Suit.—At a recent sitting of the Division court of an Eastern Ontario town, a physician sued a veterinary surgeon for medical attendance upon his family. The judge gave judgment for the defendant with costs, owing to the fact that the practitioner could not at the time produce a certificate issued by the registrar of the Ontario Medical Council, showing that he was a duly qualified practitioner. This puts a new aspect on the $2 assessment question in the province of Ontario.

University Federation in the Maritime Provinces.—A special meeting of the Governors of King's College, Windsor, N. S., was held on the 12th inst., and the meeting was attended by representatives from New Brunswick, Prince Edward Island and points in Nova Scotia; it had for its object the federation of all the colleges in these three provinces, and the establishment of one great university for all. King's College is the mother university of Canada; and in all the colleges the science departments are sadly neglected. A committee was appointed to open communications with all the colleges concerned.

Dr. Thomas G. Roddick, Dean of McGill.—Dr. T. G. Roddick, M. P., has been chosen by his fellow members of the Faculty of Medicine for the position of Dean rendered vacant through the resignation of Dr. Craik. Dr. Roddick at present holds the Chair of Surgery. He was graduated in 1868 as Holmes gold medallist. He is ex-president of the Montreal Medico-Chirurgical Society, of the Canadian Medical Association and of the British Medical Association. He was elected a Member of the Canadian House of Commons in 1896, since which time he has been prominently identified with the question of inter-provincial registration.

The Toronto Hospitals and Consumptives.—For two years the hospitals of Toronto have refused to admit consumptives to their wards; but the demand of the public press became so strong last week that, coupled with the energetic demands of the Medical Health Officer, they could hold out no longer, and the Toronto General and Grace hospitals offered to take in six patients each who were suffering from pulmonary tuberculosis. It is likely that the Western and St. Michael's will soon follow. The accommodation will extend to such time as the National Sanitarium Association shall require to get their new sanitarium near Toronto completed.

Dr. Lesslie M. Sweetnam, one of Toronto's foremost surgeons, died at Johns Hopkins Hospital on December 11, whither he had gone for treatment for blood-poisoning. Some nine or ten days prior to his journey to Baltimore, he was operating on a man with gangrene of the forearm resulting from a gunshot wound, the patient dying a few days thereafter; and while performing his toilet after the operation the surgeon had the misfortune to prick one of his fingers with the nail-brush, which accident was the starting-point for the subsequent septicemia. Dr. Sweetnam was graduated from Toronto University in 1881 and also from Victoria University. He was 42 years of age and at the time of his death was professor of clinical surgery at Toronto University and surgeon to the Toronto General and St. Michael's hospitals.

LONDON LETTER.

Death of Sir William MacCormac.

The sudden death of Sir William MacCormac, which took place on December 4, has brought to a close a most distinguished career and removed the most prominent social figure in the profession. It is feared that the sad result was due to fatigue and exposure during his service as consulting surgeon to the Army in South Africa. He was attacked with dysentery and ever since his return suffered from lumbar pain, abdominal tenderness and loss of flesh. To escape the London fogs he journeyed to Bath, where he was taking immersion baths, from which he had derived much benefit in former years. At 7:30 a. m., while sitting up in bed and taking a cup of coffee, he suddenly put his hand to his heart with an expression of pain and expired. Sir William MacCormac was born at Belfast in 1836; his father, Dr. Henry MacCormac, was a well-known medical practitioner in the town and one of the pioneers of the open-air treatment of consumption. Young MacCormac studied medicine at Queen's University in Ireland and in 1864 became a fellow of the Royal College of Surgeons in Ireland. He was appointed surgeon to the Royal Belfast Hospital and during six years' tenure made injuries of joints a special study. For many years he was a member of the senate of the Queen's University in Ireland and examiner in surgery. In 1870 he volunteered his services for the aid of the French wounded in the Franco-German war. He joined the Anglo-American ambulance, a body consisting of eight English and eight American doctors, over which Dr. Marion Sims of New York presided. On the latter's return to America MacCormac was appointed surgeon-in-chief. Each day more than 100 major operations were performed. On one day MacCormac himself performed several amputations of the leg, thigh, forearm and arm; he excised the shoulder and elbow joints, and performed partial resections of the upper and lower maxillæ and of nearly the whole ulna, to say nothing of removal of bullets and pieces of shell from various parts of the body. On his return to England he published his experiences in a work entitled, "Recollections of an Ambulance Surgeon," which enjoyed great popularity and was translated into all the European languages and into Japanese. In 1883 he was elected a member of the council, and in 1896 became president. He was re-elected president four times and thus held the office for the unprecedented period of five

years. This was no doubt largely due to his great social success. He was a *persona grata* with the King and in great favor with all ranks of society and with the profession. His presence was most imposing; he was probably the tallest man in the profession, standing 6 feet 3 or 4 inches, and had handsome aquiline features. His genial manners and generous disposition no doubt contributed largely to his social success. He was described as "a big-bodied and big-hearted Irishman." The remarkable success of the centenary celebration of the college last year and the many brilliant ceremonies were largely due to his initiative and influence. Largely through his aid were gathered together the Prince of Wales, the Premier, Earl Roseberry and the most eminent representatives of surgery in the world, who received the honorary fellowship of the college at his hands. In 1881, when the International Medical Congress met in London, he was appointed secretary-general. His services were recognized by the government, which conferred on him knighthood. His twenty years' work at St. Thomas' Hospital was most fruitful and he was a very successful teacher. He was one of the first to perform laparotomy for rupture of the bladder, and was an early and strenuous advocate of Lister's antiseptic system. In 1897 he was made a baronet. In 1898, in consequence of his unique experience of war surgery, the government gladly availed itself of his services as consulting surgeon in the South African war. His most important work was "Surgical Operations," which was beautifully illustrated by drawings from the pencil of his colleague and friend, the late Mr. Willam Anderson, surgeon to St. Thomas' Hospital. The number of foreign honors conferred on him were very great; he was decorated by almost every European government. His wife survives him, but he leaves no children.

Departure of Mr. Jonathan Hutchinson for South Africa.

Mr. Jonathan Hutchinson, who has performed in a long life the work of many men, is still hale and remains as indefatigable a student and investigator as ever. He has just astonished all his friends by undertaking a journey to South Africa for the purpose of studying leprosy and any other medical or biological phenomena which may come in his way. His principal object to investigate leprosy with reference to his fish hypothesis which, like all his doctrines, he holds with the utmost pertinacity even in the face of almost universal opposition. His opponents instance South Africa as a striking example of the breakdown of the fish theory. They say the Kaffirs abominate fish and yet suffer from leprosy. Mr. Hutchinson will first visit Robbin Island, which is near Cape Town, and is devoted to the segregation of lepers, and will interrogate the lepers himself.

Excision of the Gasserian Ganglion for Neuralgia.

At the Clinical Society Mr. Jonathan Hutchinson, Jr., reported the results of five cases in which he had excised the Gasserian ganglion, four of the patients being shown at the meeting. The operation had been performed in one case four years, in two, three years, and in one case two years previously. In not one had there been the slightest recurrence of the neuralgia. He urged that the temporal route should alone be employed to gain access to the ganglion and quoted one of his cases in which the operation from below by the pterygoid route (Rose's method) had been previously performed by another surgeon. The operation had been carried out in two stages, and it was believed that the ganglion had been at any rate in part removed. The return of the neuralgia worse than before and the imperfect anesthesia had raised doubt as to this, and at the final operation by Krause's method it was proved that the ganglion was quite intact and that the base of the skull had been penetrated outside the foramen ovale. Such a case well illustrated the fallacies attending operation by the pterygoid route. He pointed out that in severe epileptiform neuralgia of the fifth nerve the ophthalmic division was effected in only one-fifth of the cases, that probably in some of these the involvement of the first division was in a sense reflex and would be cured by removal of the second and third divisions with the corresponding part of the ganglion, leaving the ophthalmic trunk untouched. Many cases prove the correctness of this view, and he did not know of a single one in which after this course had been thoroughly carried out the neuralgia had returned in the ophthalmic division. If the latter were spared the eye ran no risk, whilst other complications, such as injury to the oculomotor nerves and the cavenous sinus might be avoided with comparative ease. He instanced one of his cases in which, after complete removal of the ganglion, the corresponding eye had become inflamed and required excision after several months had elapsed. In his later cases he had deliberately avoided cutting the ophthalmic part. As regards the details of the excision it was probably better to use a large trephine and cutting forceps—without subsequent replacement of bone—than to turn down a flap and overlying tissues. It was not always necessary to tie the meningeal artery, especially if the lower part of the ganglion alone were dealt with. Hemorrhage was lessened by keeping the patient during the whole operation in a sitting position. An electric head lamp was essential. The use of the curette to break up the ganglion was strongly deprecated. Intra-dural division of the fifth nerve was far more dangerous than extra-dural excision of the ganglion. Dr. Taffany's statistics of 108 cases, with a mortality of 23 per cent., did not at all represent the actual risk of the Hartley-Krause operation, for amongst them were included cases operated on by many methods, including the dangerous intra-dural one, and such needlessly severe methods as that advocated by Doyen. The latter surgeon had lost two out of three of his cases from the operation. The mortality of the operation by the temporal route in skilled hands was probably under 10 per cent., and so lasting were the results that without doubt in the future most of the operations on the main branches of the fifth nerve for severe neuralgia would be abandoned in its favor. He urged that the victims epileptic from neuralgia should not be left to develop suicidal tendencies or to poison themselves with morphia before being given the chance of a permanent cure by the operation.

Married.

A. S. YENNI, M.D., to Miss Marie A. Lafitte, both of New Orleans, La., November 20.

HORACE B. HADDOX, M.D., to Miss Mary Lee Waters, both of Gaithersburg, Md., December 3.

HERMAN OECHSNER, M.D., New Orleans, La., to Miss E. Edith Appel, Slidell, La., October 23.

B. A. TERRETT, M.D., Natchitoches, La., to Miss Edna Lillian Trist, of New Orleans, La., November 16.

HENRY A. BLAIR, M.D., San Antonio, Texas, to Mrs. Lily C. Edmondson, at St. Louis, Mo., December 4.

MARTIN L. MAYLAND, M.D., to Miss Josephine Olivette Sullivan, both of Faribault, Minn., November 30.

U. S. G. HUGHES, M.D., Kansas City, Mo., to Miss Dora Elizabeth Brown of Topeka, Kan., December 5.

J. W. SIMMONS, M.D., Peaster, Texas, to Miss Maude Wilcutt, of Lewisburg, Ky., at Bowling Green, Ky., December 7.

CLAUDE B. CALBREATH, M.D., Cleopatra, Mo., to Miss Mollie Boland, of Lucerne, Mo., at Kansas City, Mo., November 27.

FRANK N. FREEMIRE, M.D., Chester, Iowa, to Miss Josie Johnson, of Fountain, Minn., at Chester, Iowa, November 27.

WILLARD L. MATTHEWS, M.D., to Miss Bessie Hendricks, both of Martinsville, Ind., at Lawrenceville, Ill., December 4.

FRANK WEBSTER JAY, M.D., Chicago, late major and surgeon, U. S. V., to Miss Harriet Staples, daughter of the late Dr. George M. Staples, of Dubuque, Iowa, December 10.

Deaths and Obituaries.

John H. Sears, M.D. Medical College of the State of South Carolina, Charleston, 1852, a member of the American Medical Association; one of the founders and ex-president of the Texas State Medical Association; one of the founders and several times president of the Waco Medical Association, died at his home in Waco, Texas, after a lingering illness, December 4, aged 75. He was a native of Virginia, and served in the Civil war as surgeon of the Thirty-second Texas Cavalry and later as division surgeon. The medical men of the city met on the day of Dr. Sears' death, and adopted the following resolutions: "We, the medical profession of Waco, are called upon to mourn the loss of one of our beloved profession, whom we have in years of professional association with him learned to love and honor, Dr. J. H. Sears. Therefore, we, the medical profession of Waco, sincerely mourn our loss of both dear friend and worthy brother, whose daily professional courtesies we should all strive to emulate, thereby adding both trust and confidence to our standing with our brethren in the profession and the

public whose sympathies has so sweetened his declining years: Be it Resolved, That we tender our kindest sympathy to his family in their great bereavement, and that we, as a body, show our love and sympathy by attending the funeral in a body."

William J. Van Eman, M.D. Medical College of Ohio, Cincinnati, 1875, prominent as a physician in Kansas, a member of the local, state and the American Medical associations, died at his home in Leavenworth, Kas., December 9, from a septic wound of the hand, after an illness of three weeks, aged 52. In the early part of his career he was an acting assistant surgeon in the Army and served throughout the Sitting Bull campaign with General Miles. In 1880 he settled in Leavenworth, where he afterward resided and practiced.

John E. Beers, M.D. University of Georgetown, Washington, D. C., 1864, prominent as a practitioner of Tompkins County, N. Y., an esteemed citizen, sometime assemblyman, a surgeon during the Civil war, and for many years a member of the Pension Examining Board, died suddenly from apoplexy at his home in Danby, December 5, aged 61. For one hundred and four years, Dr. Beers, his father and his grandfather had practiced in Danby.

Edward B. Zier, M.D. University of Louisville, Ky., 1878, a native of New Albany, Ind., but for more than twenty years a practitioner of Minneapolis, a member of the legislature in 1894, died at his home in Minneapolis, December 9, after an illness of many months, from Bright's disease, aged 44.

William White Harris, M.D. Jefferson Medical College, Philadelphia, one of the most honored citizens of Wilmington, N. C., and a veteran of the Civil war on the Confederate side, died at the residence of his daughter in Wilmington, December 7, from heart failure due to acute indigestion, aged 77.

Josiah W. Pearson, M.D. University of Vermont, Burlington, 1883, a practitioner of Providence, R. I., died at a sanatorium in that city, December 2, after a brief illness from heart failure after an operation for appendicitis, aged 45.

Lesslie M. Sweetnam, M.D. Toronto University, 1881, a resident of Toronto, died December 11, at Johns Hopkins Hospital, Baltimore, from sepsis following an operation several weeks before.

Peter Austin, M.D. Jefferson Medical College, Philadelphia, 1850, who had practiced medicine in Carrollton, Mo., for more than forty years, died at his home in that place, December 7.

Robert McLearn, M.D. New York University, 1880, died at Frederickton, New Brunswick, November 29, after an illness of ten days, from bronchitis and heart trouble, aged 47.

Arthur Watters, M.D. Laval University, Quebec, 1878, a physician of Quebec, and surgeon of the Ninth Regiment, died at his home in Quebec, December 5, after a long illness.

Simeon J. Shaw, M.D. Starling Medical College, Columbus, Ohio, 1879-1880, a practitioner in Great Bend, Kas., died from heart disease at his home in that city, December 10.

Ada Smith, M.D. Woman's Medical College of Georgia, Atlanta, a native of Greenfield, Ind., died from tuberculosis at Phoenix, Ariz., December 8, aged 32.

M. S. Stahl, M.D. Rush Medical College, Chicago, 1865, died at his home in Guthrie, December 7, aged 75.

J. L. Sharp, M.D. Tulane University, New Orleans, La., at Blanchard, La., November 15.

Correspondence.

Passing of Sectarianism in Medicine—The Position of the New York State Medical Association.

NEW YORK CITY, Dec. 10, 1901.

To the Editor:—I was very much interested in an editorial from the St. Paul *Medical Journal*, which appeared in THE JOURNAL, November 16, 1901, entitled "The Passing of Sectarianism in Medicine," and I would like to call the attention of your readers to the advanced position taken by the reorganized New York State Medical Association on this subject. The only requirements for membership in this organization are that a physician shall be legally registered, shall be in good standing, and a resident of the State of New York. These requirements would seem to cover the points made in the editorial to which I have already referred, allowing, as they do, any legally registered physician in this state, *no matter* from *what school* he may have graduated, to become a member of the Association, provided only that the applicant calls himself simply a physician, without making use of any qualifying adjective, and does not belong to any organization which is avowedly hostile to the general medical profession. To make its position on this point perfectly clear, the Council and Fellows of the New York State Medical Association at its annual meeting held in this city in October last, passed the following resolution:

"WHEREAS, There exists widespread misunderstanding as to the interpretation of Section 1, Art. IX of the by-laws of the New York State Medical Association, it is hereby declared that the words, 'Physicians in good standing,' have been, and are held to mean, under the code of ethics of the American Medical Association, legally registered physicians who make no claim to base their practice upon exclusive dogma, and who maintain no professional relation with organizations or institutions representing such dogma."

Yours truly, FREDERICK HOLMES WIGGIN, M.D.,
Formerly Secretary, the New York State Medical Association.

Miscellany.

The Osteopathy Decision in Ohio.—The following is the substance of the facts regarding the sweeping decision of the Supreme Court in the test case of the State against Henry H. Gravett, of Darke County, as given by our correspondent:

"Doctor" Gravett was indicted for practicing osteopathy without first having complied with the law of Feb. 27, 1896, as amended April 14, 1900. The original act requires all persons who contemplate practicing medicine to submit to an examination before the State Board of Medical Examiners. In a case brought under that section the State argued that the system of rubbing or kneading the body known as osteopathy, is an "agency" within the meaning of the statute, but the court held that the practice of medicine means the administering of a drug or medicine that is intended to produce an effect by its own potency. Two years ago the law was amended and an attempt made to give a broader definition of the term "practice of medicine." Under this act, any "appliance, application, operation, or treatment of whatever nature for the cure or relief of any wound, infirmity," etc., is called the practice of medicine. The amendment excluded from the requirements of the original act requiring examination "any osteopath who holds a diploma from a legally chartered and regularly conducted school of osteopathy . . . . wherein the course of instruction requires at least four terms of five months each in four separate years, provided that such osteopath shall pass an examination satisfactory to the State Board on the subjects of anatomy, physiology, chemistry and physical diagnosis." The Supreme Court, in overruling the exceptions to the decision of the Common Pleas Court, finds that the system of kneading, commonly known as osteopathy, is comprehended within the practice of medicine defined by the amendment of two years ago, and that an osteopath may be required to conform to such reasonable standard respecting qualifications as the General Assembly may prescribe, but an enactment which discriminates against osteopaths by requiring them to hold diplomas from a college which requires four years of study as a condition to their limited certificates which will not permit them to prescribe drugs or perform surgery, while not requiring such time of study from those contemplating the regular practice as a condition to their obtaining unlimited certificates, is, as to such discrimination, null and void. The decision was unanimous.

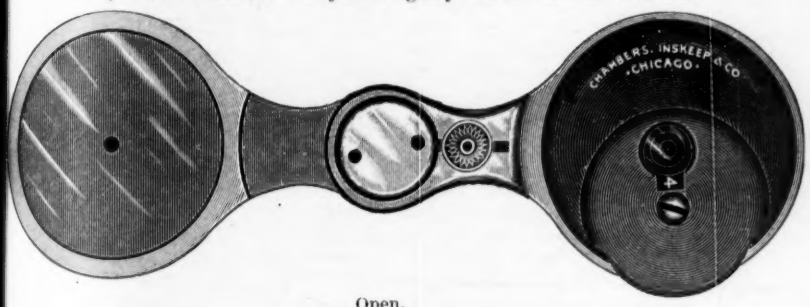
New Instruments.

A NEW OPTHALMOSCOPE,

COMBINED WITH WHICH THERE IS A PLANE MIRROR FOR RETINOSCOPY; INTENDED AS A POCKET INSTRUMENT FOR OPHTHALMOLOGISTS AND PRACTITIONERS.

BROWN PUSEY, M.D.
LATE HOUSE SURGEON, NEW YORK EYE AND EAR INFIRMARY.
CHICAGO.

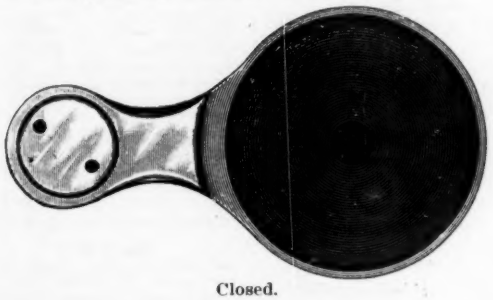
This instrument is offered primarily to meet the demand for an ophthalmoscope that can be carried conveniently in one's pocket without a box or case. It consists of a frame with two arms, which swing on a hinge-joint. The arms carry two mirrors, which are so placed that when the instrument is closed, the mirrors lie face to face, and are thus protected from injury and dirt. When the instrument is open one arm acts as a handle for the other. In the joint there is a spring bolt, which fastens the joint tightly when the mirrors lie



Open.

face to face, and also locks the joint when the instrument is open; this spring bolt is loosened by pressing a little knob. The arms are nickel-plated; on the outside this plating has a high polish, on the inside it has a dull finish, so that this metal part will not reflect light. The parts which form the backs of the mirrors are lacquered black.

The mirrors are circular, with a diameter of 1 3-16 inches; the concave mirror has a focal length of 11 inches. Back of the concave mirror, a wheel is placed in which there are five lenses, a +2 D., a +4 D., for use in making examinations by the indirect method, a +8 D. for use in examining on levels in front of the retina, a —3 D. for the unskilled user, who accommodates when making a direct examination, and a —10 D.



Closed.

for examining myopes; there is also a hole in the wheel. The silvering of the mirrors at the center is removed in a circular space of 3/32 of an inch in diameter; this arrangement was observed particularly because of the advantages offered by such mirrors for retinoscopy.

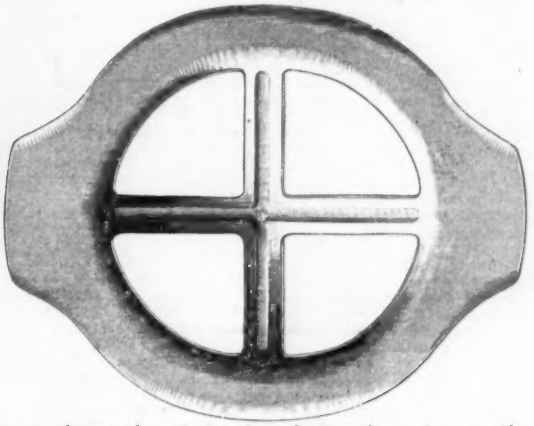
The completeness of the instrument will suggest itself. It is not a refracting ophthalmoscope with its many combinations of lenses, and, indeed, who in the present day of accurate refraction wants a refracting ophthalmoscope? The instrument is not intended to take the place in the ophthalmologist's office of his Morton. It is so compact that it weighs less than two ounces; it is ¼ inches thick, 2⅜ inches long when closed. It is solid, substantial and of neat finish, and can be sold at a very low price—an advantage which will be particularly considered by students.

VACCINATION SHIELD.

C. P. FRANKLIN, M.D.
PHILADELPHIA.

After repeated and increasing trouble with irritated, inflamed and infected arms due to the existing forms of vaccination shield, the idea of what a vaccination shield should be has, during the course of the last ten thousand vaccinations, been gradually evolved, until the form described below, and shown in the illustration has been reached, and the writer feels that he has produced a shield which will meet all the conditions properly imposed upon such an important accessory to a perfect vaccination. A shield may be a source of comfort, protection and satisfaction, or it may be productive of distress, irritation and even infection if not suitable. The objections urged against the present forms in use have been obviated in that described below.

The shield is made of aluminum, 6 centimeters in diameter to the outer edge of its flange, which latter is curved so that



it presents no sharp edges but a broad smooth surface to the arm, and is extended at each end into a tab or projection by which it is fastened to the arm with short, narrow strips of plaster. The central part, or dome, is 4.5 centimeters in diameter, and is raised above its base one centimeter, being composed of two ribs, crossing at right angles, each rib being strengthened by a beading or groove, so that it will stand any ordinary pressure. The advantages of this shield are: lightness and durability; adaptability, as being of annealed metal it can be readily curved to fit the contour of the part vaccinated; cleanliness, as it can be washed and sterilized as often as necessary; non-irritating, as, owing to its large openings and air spaces, it does not confine the wound, and is accessible for inspection without disturbing it.

Association News.

The Committee on National Legislation.

The Committee on National Legislation has sent the following communications to the secretaries of the different State Medical Societies and hereby requests any such secretary who fails to receive his notice, to communicate at once with the Committee, through its chairman, H. L. E. Johnson, M.D., Washington, D. C.

WASHINGTON, D. C., Dec. 2, 1901.

My Dear Doctor:—On behalf of the Committee on National Legislation of the American Medical Association, I earnestly request you to send at your earliest opportunity the names and addresses of the delegate and alternate who are to represent your State Medical Society at the Third Annual Conference at Washington, D. C., this winter.

When you furnish me their names, I will notify them and you of the date of the proposed conference. Please refer to the Second Annual Report of this Committee and the minutes of the Second Annual Conference which appear in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION of June 8, 1901, on pages 1635 and 1636, respectively.

Please acknowledge the receipt of this communication and thereby facilitate the work of this Committee, and greatly oblige.

Yours very truly, H. L. E. JOHNSON, M.D., Chairman.

WASHINGTON, D. C., Dec. 2, 1901.

My Dear Doctor:—At the meeting of the Second Annual Conference of the Committee of the American Medical Association on National Legislation, with the delegates from the various State

Medical Societies, held at Washington, D. C., February 20 and 21 last, the Conference by unanimous vote directed me to send to the secretary of each State Medical Society in affiliation with the American Medical Association the following:

The American Medical Association has provided in its Constitution for a Committee on National Legislation whose duty it shall be to keep informed on all matters of medical legislation arising in the National Congress, and present to that body the wishes and views of the American Medical Association, and the regular profession, with respect to these various measures proposed. It is the duty of this committee to oppose all medical measures introduced in the House or Senate which are deemed obnoxious or hurtful to the interests or wishes of the medical profession of the United States, and to favor the passage of such medical matters proposed in said Congress which are considered wise, just and proper by your Committee on National Legislation. In order to learn the wishes and views of the general profession on the medical matters proposed, and strengthen the representations of the Committee on National Legislation before Congress and its various Committees, the American Medical Association requests the various State Medical Societies, the Medical Department of the Army, Navy, Marine-Hospital Service and the U. S. Animal Industry, to appoint, each, one delegate and one alternate to meet the Committee on National Legislation in annual conference at Washington, D. C., discuss the various medical matters pending before Congress, and when necessary to appeal to the National Congress as a conference, to pass or defeat medical measures which may be approved or disapproved at the annual conference. The American Medical Association wishes to emphasize before the Congress of the United States and the various State Legislatures, the importance and high standing of the medical profession of the United States, and impress upon these bodies the necessity and propriety of hearing and considering the wishes of the regular profession in matters of pending medical legislation. It is duly appreciated that legislators have been in the habit of hastily passing medical laws and ordinances without consulting the views or opinions of the scientific medical profession. The Legislative Committee with the co-operation of the State Medical Societies, through their delegates in joint conference assembled, annually, at Washington, will unqualifiedly raise the standard of medical views and opinions with respect to State and National medical legislation.

The Committee on National Legislation points with pride to its last annual report to the American Medical Association published in THE JOURNAL of June 8, beginning on page 1635, from which I quote, among other things: "We are pleased to report that as a result of the combined efforts of your Committee, and the delegates to the Annual Conference, the obnoxious Senate Bill No. 34, entitled, 'For the further prevention of cruelty to animals in the District of Columbia,' known as the Antivivisection Bill, has been defeated, and rendered practically impossible of passage in the future. As a result of the Second Annual Conference held at Washington, February 20 and 21, 1901, we have the honor to report the passage of Senate Bill No. 4171, entitled, 'An act granting additional quarantine powers and imposing additional duty upon the Marine-Hospital Service,' and the defeat of Section 150 H. R. Bill No. 13,423 of the codification of postal laws. This section, if it had become a law, would have cost the American Medical Association about $30,000 extra in postage in connection with the distribution of THE JOURNAL to our members and subscribers. We observe with great satisfaction and hope for future National influence of the American Medical Association, and the Committee on National Legislation that the Medical Societies of the several States and Territories are beginning to appreciate the importance of the Annual Conference, and the necessity of State co-operation in matters of medical legislation, both local and National, as evidenced by the increased attendance at the Second Annual Conference which was held at Washington, D. C., in February last, at which conference the delegates in session appointed a standing committee of the Second Annual Conference with full power to represent them and act *ad interim* in all medical matters arising in the Congress of the United States."

The American Medical Association desires to impress upon the several State Medical Societies the great importance, and the National weight of the annual conferences, and to this end urges each State Medical Society to appoint promptly a delegate and alternate to each annual conference. In order to facilitate the labors of the Committee on National Legislation the secretary of each State Society is requested to send to the Chairman of the Committee on National Legislation the names and addresses of their delegate and alternate duly appointed. The Third Annual Conference will be called before the close of the present session of Congress, possibly the latter part of February or the first of March, 1902.

Very truly yours,

H. L. E. JOHNSON, M.D., Chairman,

Committee on National Legislation, American Medical Association.

New Members.

The following is a list of new members for the month of November, 1901:

ALABAMA.

Law, W. L., Montgomery.
McNeill, R. B., Jenison.
Stubbs, G. H., Birmingham.

CALIFORNIA.

Abrams, Albert, San Francisco.
Couey, E. J., Fresno.
Eichler, A., San Francisco.
Fehleisen, F., San Francisco.
Shank, G. A., Benicia.
Morton, A. W., San Francisco.

CONNECTICUT.

Wade, J. A., Danbury.
Judson, W., New Haven.

GEORGIA.

Burford, R. E. L., Brunswick.
Dozier, Jr., R. T., Milledgeville.
Minter, H. G., Jakin.

ILLINOIS.

Barnes, C. L., Chicago.
Miller, J. E., Chicago.
Naughton, M. T., Chicago.
Noble, R. M., Chicago.
Roberts, T. E., Chicago.
Ransom, P. W., Rockford.
Wagner, G. W., Chicago.
Whitfield, G. W., Chicago.
Willard, W. G., Chicago.
Achard, H. J., Roselle.
Campbell, Jas., Elgin.
Daly, V. M., Pontiac.
Denby, J. P., Carlinville.
Diller, F. S., Roberts.
Elion, C. J., Altona.
Fish, W. H., Baylis.
Galbraith, C. M., Carbondale.
Jennings, J. F., Scotland.
Keller, U. S. G., Warren.
Lane, G. H., East St. Louis.
Matheny, Z. E., Pesotum.
Starke, C. V., Rockford.
Watterson, W. H., N. Chicago.
Hughes, Thos., Chicago.
Low, J. R., Chicago.

INDIANA.

Bowen, J. F., Rushville.
Boor, W. F., Newcastle.
DuPuy, C. M., Riley.
Graessle, G. G., Seymour.
Jones, G. B., Rushville.
Loring, D. J., Valparaiso.
Marsh, J. L., Brownsburg.
Bowen, J. F., Rushville.
Day, Albert, Crothersville.
Putnam, W. E., Whiting
Reynolds, F M., Montpelier.
Rowland, Geo., Covington.
Shafer, J. W., Morocco.
Stork, J. W., Evansville.
Smoot, D. B., Glen Dale.
Smith, I. F., Arlington.
Tucker, F. A., Noblesville.

INDIAN TERRITORY.

Davis, C. Howard, Checotah.
Gardner, D., Lehigh.

IOWA.

Bartine, W. W., Goldfield.
Kemmerer, T. W., Iowa City.

LOUISIANA.

Bouvier, J. G., Jeannette.

KENTUCKY.

Cook, J. J., Wedonia.
Owen, W. O., Ft. Thomas.
Price, J. T., Harrodsburg.
Pennington, M., Mt. Vernon.
Young, F. O., Lexington.

MAINE.

Kilbourne, F., Presque Isle.
Meserve, A. K. P., Portland.
O'Connor, J. W., Biddeford.
Webber, W. E., Lewiston.

MASSACHUSETTS.

Allen, F. H., Haverhill.
Benson, C. S., Haverhill.
Collins, W. J., Northampton.
Ferguson, R. H., Boston.
Janes, G. H., Westfield.
Shaw, T. B., Worcester.
Piloner, H. F., Haverhill.

MICHIGAN.

Shipman, G. W., Detroit.
Wallace, J. B., Saline.
Williams, G. S., Pontiac.
King, H. M., Grand Rapids.

MINNESOTA.

Burch, F. E., Glencoe.
Mesker, G. H., Olivia.
Sukeforth, L. A., Carlton.
McCoy, Mary, Duluth.

MISSISSIPPI.

Wadsworth, D. U., Meridian.

MISSOURI.

Hetherington, E. M., Kansas City.
Max, C. O. C., St. Louis.
West, Wm. M., Monett.

MONTANA.

Renick, W. L., Butte.
Schwartz, S. E., Butte.

NEBRASKA.

Woods, Royal, Strickley.
Hogan, D. S., North Loup.
Rich, C. O'Neill, Omaha.

NEW HAMPSHIRE.

Murphy, N. W., Concord.
Petit, A. W., Nashua.

NEW JERSEY.

Baldwin, A. K., Newark.
Disbrow, V. M., Lakewood.
English, D. E., Mill Burn.
Fretz, J. H., Lambertville.
Gaston, W. F., Plainfield.
Ill, C. L., Newark.
Lansing, J. B. W., Tenafly.
Livengood, H. R., Elizabeth.
Mallon, P. S., Morris Plains.
Mitchell, C. H., Trenton.
Norton, H. G., Trenton.
Steadman, E. T., Hoboken.
Sharp, L. L., Medford.
Souder, L. R., Atlantic City.
Haines, J. C., Vincentown.
Mecray, Jas., Cape May.
O'Reilly, H. M., Morristown.
Van Horne, B. G., Englewood.
Schauffler, W. G., Lakewood.

NEW YORK.

Carter, H. W., New York City.
Howard, F. E., Friendship.
Herrick, W. P., New York City.
Humphrey, L. H., Silver Springs.
Loughhead, W. H., Nile.
Leo, J. B., New York City.
Meltzer, S. J., New York City.
Packer, T. G., Smyrna.
Sherman, T. J., Ballston.
Seward, W. M., New York City.
Stuart, Walter, Westfield.
Way, A. C., Perry Center.
Wells, S. W., Liberty.
Yankauer, S., New York City.

NORTH CAROLINA.

Clarke, F. M., Beaufort.
McLean, N. M., Gibson.

OHIO.

Boggs, Jessie, Cleveland.
Hyde, A. G., Soldiers' Home.
Longstreth, W. E., Comly.
Morrison, R. M., Youngstown.
Yoder, J. A., Lucas.

OKLAHOMA.

Reed, H., Guthrie.

OREGON.

Bruere, G. E., Portland.
French, C. G., Portland.
Glery, A. J., Portland.
Lane, Harry, Portland.
Locke, J. K., Portland.
Walker, A. D., Portland.
Wiley, J. O. C., Portland.
Wilson, H. C., Portland.
Wilson, G. F., Portland.
Yenney, R. C., Portland.
Sommer, E. A., Oregon City.

PENNSYLVANIA.

Giroin, J. H., Philadelphia.
Keller, J. C., Windgap.
Baird, W. C., McKeesport.
Burleigh, W. T., Pittsburg.
Caldwell, H. E., Morris Run.
Darrack, J., Philadelphia.
Downs, N., Philadelphia.
Faulkner, R. B., Allegheny.
Haig, C. R., Philadelphia.
Pritchard, M. R., Harrison Valley.
Stubbs, A. H., Wakefield.
Spackman, R. V., DuBois.
Schlesman, C. H., Allentown.
Tait, T. W., Philadelphia.
Zeller, A. T., McKeesport.

RHODE ISLAND.

Darby, T. F., Riverpoint.

TENNESSEE.

Tidwell, R. S., Tate Spring.

TEXAS.

Barnhill, P. D., Plantersville.
Burnett, W. R., Denton.
Carleton, J. C., Bonham.
Heaney, A. G., Corpus Christi.
Johnson, R. M., Hereford.
Lipscomb, P., Denton.
McReynolds, S., Denton.
Ralston, J. C., Galveston.
Thomason, J. W., Huntsville.
Thompson, F. D., Ft. Worth.
Thompson, J. E., Galveston.
Washburn, W. R., Dallas.
Hazlewood, W. R., Briggs.

VERMONT.

Brown, E. M., Sheldon.
Brigham, F. L., Pittsfield.
Lazell, W. E., Barre.
Liddle, F. C., Dorset.
Radike, A. J., Burlington,

VIRGINIA.

Lilliston, A. H., Accomac.
Mason, E. T., Savageville.

WASHINGTON.

Brown, E. M., Tacoma.
Redpath, N. J., Olympia.
Sharpless, C. W., Seattle.

UTAH.

Gowans, E. G., Logan.

WEST VIRGINIA.

Barker, D. H., Reedy Ripple.
Cox, J. A., Morgantown.
Hill, F. W., Montana Mines.
Kelly, W. C., Morgantown.
Nutter, T. L., Enterprise.
Owen, H. K., Hambleton.
Robins, J. E., Claremont.
Sivey, W. M., Tunnelton.
Smith, G. W., Monongah.

WISCONSIN.

Thomson, Bertha V., Oshkosh.
Gunderson, A., La Crosse.

WYOMING.

Harris, L. A., Sheridan.

Societies.

Montgomery County (Ohio) Medical Society.—At the annual meeting of this Society Dr. John S. Beck, Dayton, was re-elected president and Dr. Horace Bonner, Dayton, secretary.

Summit County (Ohio) Medical Society.—This Society held its annual meeting at Akron, December 3, and elected Dr. Charles E. Held, president; Dr. L. B. Humphrey, vice-president; Dr. Edward A. Montenyohl, secretary, and Dr. Charles E. Norris, treasurer, all of Akron.

St. Louis Academy of Medicine.—At the annual meeting of this Academy the following officers were elected to serve one year, from December 11: Dr. Augustus C. Bernays, president; Dr. J. William Williamson, vice-president; Dr. G. Harry Nicks, second vice-president; Dr. Alfred Roulet, secretary, and Dr. G. Howard Thompson, treasurer.

Crow River Valley Medical Society.—The twenty-first meeting of this Society was held in Litchfield, Minn., December 11. Papers were read by Drs. Harry Morrel, Slayton; Henry E. Cassel, Litchfield; Frank M. Archibald, Atwater, and James W. Robertson, Litchfield. The Society was entertained by Dr. Wiley E. Chapman, Litchfield.

Brazos Valley (Texas) Medical Association.—The twelfth annual convention of this Association was held at Bryan, November 12 and 13. Resolutions were passed on the deaths of Drs. Ernest A. Thompson, Navasota, and R. K. Fountain, Jones Prairie. The usual banquet was held and Marlin selected as the place for the semi-annual meeting in May, 1902.

Butler County (Ohio) Medical Society.—At the annual meeting of this Society held at Middletown, December 4, Dr. James E. Torrence, Oxford, was elected president; Dr. Edward H. French, Hamilton, vice-president; Dr. John R. A. Grafft, Hamilton, secretary, and Dr. Francis M. Fitton, Hamilton, treasurer. Dr. Joseph Eichberg, Cincinnati, made an address on "Latent Endocarditis."

Rock County (Wis.) Medical Society.—The annual meeting of this Society was held December 6, at Janesville. The following officers were elected: Dr. Samuel B. Buckmaster, Janesville, president; Dr. Michael A. Cunningham, Janesville, vice-president; Dr. George W. Fifield, Janesville, secretary; Dr. Ranson W. Edden, Janesville, treasurer, and Dr. Frank B. Farmsworth, Janesville, censor.

Delaware County (Ind.) Medical Society.—At the last meeting of this Society for the year, held at Muncie, "Food and Drug Adulterations" was the subject for discussion. Dr. James N. Hurty, secretary of the State Board of Health, was present. Dr. Henry C. Burcham, Albany, was elected president; Dr. Arthur T. Kemper, Muncie, vice-president, and Dr. Ulysses G. Poland, Muncie, secretary and treasurer.

Calhoun County (Mich.) Medical Association.—The twenty-fifth annual meeting and banquet of this Association was held in Albion, December 3. The following officers were elected: Dr. George C. Hafford, Albion, president; Drs. Louis S. Joy, Marshall, and James H. Reed, Battle Creek, vice-presidents; Dr. William H. Haughey, Battle Creek, secretary, and Dr. Richard M. Olein, Battle Creek, treasurer. The next meeting will be held in Battle Creek, March 4, 1902.

Southeastern Iowa Medical Society.—The thirty-first annual meeting of this Society in Burlington, November 21, was one of the most largely attended and successful in the history of the Society. The election of officers resulted as follows: Dr. Charles F. Wahrer, Fort Madison, president; Drs. George Kinney, Burlington, and William S. McClellan, Morning Sun, vice-president, and Dr. Carl Stutsman, Burlington, secretary-treasurer. The next meeting will be held in November, 1902, in Fairfield.

Buffalo Academy of Medicine.—The last stated meeting of the Medical Section was devoted to clinical reports. A case of Little's disease was reported by Dr. Irving M. Snow; one of Friederich's ataxia, by Dr. Dewitt H. Sherman; one of microcephalus, by Dr. L. W. Schrotten, and one of congenital idiocy, by Dr. Julius Ullman. Dr. Charles H. Frazier of Philadelphia, Pa., addressed the Surgical Section of the Academy on "The Division of the Sensory Root of the Trigeminus for the Relief of Tic Douloureux—An Experimental, Pathological and Clinical Study with a Preliminary Report of One Surgically Successful Case."

Tri-County Medical Society of the State of California.—A number of the physicians of Santa Cruz, San Benito and Monterey Counties, met December 3, in Watsonville, Santa Cruz County, and organized, with seventeen charter members. The following officers were elected: Dr. Thomas C. Edwards, Salinas, Monterey County, president; Drs. Henry C. Whiting, Santa Cruz, Santa Cruz County; Nat. Green, Watsonville, Santa Cruz County; Auburn M. Stafford, Monterey, Monterey County, and James H. Tebbetts, Hollister, San Benito County, vice-presidents, and Dr. Saxton T. Pope, Watsonville, Santa Cruz County, secretary-treasurer. At the close of the meeting the physicians of Watsonville entertained their professional brethren at a banquet.

Northwest Arkansas Medical Society.—The annual meeting of this Society was held in Fayetteville, December 3. The Society is in flourishing condition. The following papers were read: By Dr. William P. Illing, Little Rock, "The Use of Tropa-Cocain in Spinal Anesthesia"; by Dr. L. Kirby, Harrison, "A Case of Ovariotomy"; by Dr. Joseph T. Clegg, Siloam Springs, "Abortion"; by Dr. Charles H. Cargile, Bentonville, "Dysmenorrhea"; by Drs. E. H. Highfill, Hoover, and George W. Cale, Jr., Springfield, Mo., "Case Reports"; by Dr. John B. Bolton, Eureka Springs, "The Profession"; by Dr. James H. Lindsey, Bentonville, "A Case of Compound Dislocation of the Elbow Joint"; by Dr. Asbury J. Vance, Harrison, "A Case of Fracture of the Skull, with Loss of Brain Substance"; by Dr. David C. Summers, Elm Springs, "Syphilis"; by Dr. Rufus S. Rice, Rogers, "Diphtheria and Its Treatment"; by Dr. Herbert Moulton, Fort Smith, "Shot Injuries of the Eye"; Dr. Thomas W. Hurley, Bentonville, "Veratrum Viride," and Dr. William B. Welch, Fayetteville, "Dirt and Its Dangers." Dr. Thomas W. Hurley, Bentonville, was elected president; Dr. Harvey D. Wood, Fayetteville, vice-president; Dr. Frank B. Young, Springdale, secretary; Dr. Rufus S. Rice, Rogers, assistant secretary, and Drs. William B. Welch, J. Young, and Rufus S. Rice, committee on credentials. The next meeting will be held at Rogers, in June next.

Marion County (Ohio) Medical Society.—The annual social session and banquet of this Society, December 10, in Marion, was held in the parlors of the Hotel Reber and the banquet was served in the spacious dining-room of the hotel. Dr. O. W. Weeks was the toastmaster, and in assuming his duties responded to the toast, "The President of the United States." Dr. B. L. Milliken, Cleveland, responded to "The Medical Profession." Dr. H. C. Uhler toasted "Our Guests," and Dr. C. A. L. Reed responded. Dr. J. A. Kimmell, author of the Kimmell Bill to regulate the Practice of Medicine in Ohio, toasted "The Ohio State Medical Society." Dr. C. E. Brush, president of the State Society, and Dr. P. Maxwell Foshay, secretary of the Society, responded.

Dr. C. A. L. Reed, Ex-President of the American Medical Association, closed his address before the social session, on "Currents and Counter-Currents in the Profession," with the following:

> It seems, from evidence that has recently come from within the army itself, that the medical department has not only been degraded, but that it is practically without authority. This was strikingly, indeed, tragically, illustrated during the recent war. A commandant—and I have no hesitancy in saying that I mean General Brooke—was in charge of more than a quarter of the entire army. His command was made up of the flower of American manhood, and was encamped at a health resort. He, however, in violation of the precedent of the usually cultivated and competent gentlemen of the line, but acting under the permission of existing army regulation, not only set aside recommendations of his sanitary officers, but, by personal example, incited his men to violate the most fundamental sanitary laws. The result was what might have been expected. Of the more than 50,000 men in his command, 12,000 were invalided, while nearly 1000 died from preventable causes. If, in an active military operation, General Brooke had ignored the advice of his scouts and had led his command into an ambush, with similar disastrous results—12,000 wounded and 1000 killed—he would have been court-martialed, and, doubtless, dismissed from the service. The regulations, however, I am advised, fix no responsibility for this unparalleled calamity, the enormity of which is only beginning to be understood. It is not surprising that efforts have been made to suppress knowledge of it. I am told that General Brooke himself threatened to court-martial a witness who offered testimony on this point. I am also advised that the Army Investigating Commission, in the interest of public decency, omitted from its public report much testimony on this phase of the conduct of the war. . . . We of America may blush, but the scandal is ours. The voracious historian of military horrors must classify "Brooke's Blunder" with the "Black Hole of Calcutta." The Congress, at the present session, is to be asked to intervene in this matter—a matter that appeals to every soldier, to every home that furnishes a soldier, to every patriot that is proud of the army, to every citizen that is actuated by the ordinary impulses of humanity.

Dr. P. Maxwell Foshay addressed the social session on the importance of all legal practitioners in all states and territories of the Union, of uniting in the organization of medical societies in their respective counties where there was no organiza-

tion, on the plan adopted by the American Medical Association that the barriers between the schools might be broken down and that all practitioners might unite upon the basis of a common cause for the elevation of the science of medicine to a higher standard; also that the profession might receive a higher recognition in the military service of the United States.

CALIFORNIA ACADEMY OF MEDICINE.

Regular Meeting, held Nov. 26, 1901.

DR. D. W. MONTGOMERY in the Chair.

Ankylostomiasis.

DR. L. A. KENGLA presented a case of ankylostomiasis as follows: J. A. H., aged 34, male, single, height 5 feet 11 inches, weight 138 pounds, was discharged from the Army in April as well and capable of duty. At age of 18 had scarlet fever, which left him a little deaf, otherwise very healthy until a year after enlistment, which occurred in May, 1898. Was sent to the Philippines in November, 1898, in perfect health, weight 160 pounds; began active service on arrival throughout Northern Luzon; was forced to drink from stagnant pools and of water wherever found. About August, 1900, complained of inability to march; of weakness with fever, which was variable as to time of appearance and intensity. Bowel disturbances with diarrhea became more frequent and severe; symptoms would become intensified and then improve. He continued in the field, growing pale and losing flesh. Diagnosis of malaria was made and treatment given accordingly. There was no improvement, and about Nov. 15, 1900, a severe attack of diarrhea set in with increased weakness, prostration and great pallor. He was sent to the hospital. His evacuations ranged from 6 to 25 in a day, loose and soft, coated with mucus, with no pain and no blood except on March 15, when he had rather a free hemorrhage from bowels and another slight one, May 18. There was an uncomfortable sensation in abdomen of soreness, distention and puffiness. His temperature was variable, reaching 106, and falling rapidly to 99, and seemed to depend upon character and quantity of food; solids caused much distress, uncomfortable feeling in epigastrum and tenderness; increased the frequency of stools and raised the temperature. As a rule the number of passages did not keep pace with variations of temperature. The patient grew weak, greatly depressed and melancholic. Appetite was variable, sometimes ravenous; always had desire for food, but was afraid of the consequences. He had an intense longing for gritty substances, sand, chalk, clay, etc. There was dizziness, dyspnea on exertion and palpitation of heart. During the months of December and January all symptoms increased, especially pallor, weakness and exhaustion. Bowel movements were same in character and consistency; average about same as in November, of brown, gray or ashy color, with no griping or tenesmus. The amount of urine remained about normal, though the color changed with varying conditions. Temperature ran from 99 to 104, pulse 120 or more; sleep during this time was fairly good. Anemia was deep and marked. In January edema of legs appeared; they became badly swollen, and to a less degree also face and hands. All other symptoms slightly increased. He noticed fatty tumors at various parts of body in January. Left Manila February 17, presumably dying. The journey across the Pacific improved his general condition a little; his diarrhea, digestive disturbances and anemia remained nearly the same. He was under treatment for several weeks at the Presidio, and was finally voluntarily discharged. When the author saw him on May 18, his condition was as follows: Patient fairly well nourished; extremely pale; complained of severe diarrhea, 10 movements that day; great weakness and exhaustion; dyspnea; palpitation on exertion; temperature 103; pulse 125; respiration 24. Inspection showed no sign of emaciation; adipose tissue was in good quantity and well distributed; skin was of slightly dull muddy color, tinged perceptible yellow; eye, sclera and conjunctiva were pale; pupils were equal, no dilatation; tongue was coated, flabby and indented; muscles of body were well developed, slight edema at ankles and very slight of face; face was full, rounded, and expression dull, showing distress and uneasiness. Physical examination May 19: Face full; lips, gums, mucous membrane and fauces extremely pale, almost bloodless; chest well developed, no atrophy of muscles, lungs normal; heart normal, unless slightly hypertrophied, sounds normal; slight anemic murmur; impulse not exaggerated; apex-beat in fifth intercostal space; abdominal muscles well developed; no tympanites; no distention; no retraction in epigastric region; extending into right and left hypochondriac and upper portion of umbilical regions were several small nodules, the size of an almond and plaques of two to four inches were found in the subcutaneous tissues, which appeared to be collections of adipose tissue. Several were also found on the legs, arms, forearms and back, though small and well defined. On pressure, marked tenderness was made out in epigastric region and to a less degree over abdomen; no severe pain could be evinced; region of appendix normal; stomach normal in size; spleen normal; liver normal; kidney area free from tenderness; genitals normal; reflexes not tested; sexual desire entirely lost. Patient insisted that many of his regiment suffered from the same symptoms, several of them dying; and that he had passed worms in November and December. No diagnosis was made; other treatment than bismuth, which he had used for the control of bowel movements, was deferred for the day. May 20, condition was very much the same, temperature 101.5 to 104, pulse 125, respiration 24, appetite capricious; evacuations eight. Examination of blood requested to determine possibility of malaria or ameba of tropical dysentery. Iron and arsenic were ordered, also proper dietary. May 24, condition was same; thymol ordered, two grains every two hours in emulsion on empty stomach, to be followed by castor oil. May 25, condition was much the same; temperature 101 to 103; bowels moved 20 times, large soft evacuations, but were not saved as directed. Treatment continued. May 26, condition seemed weak, thymol continued; some nausea, no appetite; temperature 101 to 104; pulse 130, respiration 24; evacuations 12, increased by oil. May 28, he was weak, sweating, distressed from thymol; dose reduced; unable to sit up; bowel movement frequent; appetite poor. May 31, as no adult worms had been found and patient had become so nauseated from thymol, ethereal extract of male fern was substituted, one to two drams a day, followed by oil; otherwise condition was not improved, weak and depressed. June 3, patient's expression was better; complains of insufficiency of liquid diet; pulse stronger, 120; temperature 101 to 102; respiration, 24; evacuations 10; treatment continued. June 5, expression was growing easier, with less distress and uneasiness; pulse 120; temperature 100.5 to 102. Color seemed better, mind clearer, desired food; felt better than for months. June 8, male fern was now given on alternate days, a dram to two drams in four doses. The bowels acted less frequently even after four and six doses of oil. The temperature showed a tendency to remain lower, highest reaching 101. June 10, bowels did not move; increased doses of oil ordered; he took 8 ounces without effect; highest temperature, 101; pulse, 104; respiration 20. June 15, pulse stronger, 96, gaining in fulness; bowels would not move without large doses of oil. Temperature had not risen above 101; respiration, 20 Eye brighter, expression much improved, tongue clearing, pallor of lips and nails improved, little tenderness over the abdomen, muscular power returning, appetite very good, general improvement marked. June 18, temperature for three days was normal in morning, 100 in evening, depending on indiscretion of diet. From this date patient showed rapid and marked improvement. Patient's weight at this time was 168 and he felt perfectly well, though the blood count did not sustain this opinion. Besides the ankylostomum the patient was also infected with the tricocephalus dispar. Since this case had been found it was reported that several cases had come to the Presidio General Hospital from the Philippines and that one case had been found at the County Hospital.

DR. H. A. L. RYFKOGEL, in connection with this case, presented the following report: On May 22, the case just reported was referred for examination of blood and feces. Examination of feces showed large numbers of the characteristic ova of ankylostomum duodenale; a few eggs of tricocephalus hominis, and

oscaris lumbricoides were also found. The stool passed after the first dose of male fern was unfortunately thrown out, and with it probably the majority of the parasites. A few eggs still remained in the feces, and in three subsequent examinations eight female worms were found. In one stool a lumbricoid was also discovered. The eggs of the ankylostomum and lumbricoid disappeared in about two weeks, but those of the tricocephalus were found in the last examination, which was in October. Examination of the blood gave the following result: Red blood cells, 2,130,000; white blood cells, 18,600; hemoglobin, 15 per cent. The differential count showed 9300 neutrophiles, 6138 eosinophiles, large mononuclear, and 2418 lymphocytes; 33 per cent. normoblasts to the cover were present. After the expulsion of the parasites, the red cells and hemoglobin rapidly rose. On July 5, the red cells numbered 3,735,000 and the hemoglobin was 28 per cent. The white cells at this time numbered 10,000; of them, 49 per cent. were eosinophiles, 2900 neutrophiles, 600 large mononuclears and 1600 lymphocytes. Seventeen days later another count was made and the red cells found practically the same; the hemoglobin had risen from 28 to 40 per cent. at this date; notwithstanding the fact that no ova of the uncinaria were found in the stool for a month the leucocytes had increased to 15,340, of which 54 per cent. were eosinophiles and 5000 neutrophiles. Eight days later the leucocytes numbered 24,500, a rise of 9000, although the patient was steadily improving. The differential count showed 14,000 eosinophiles and 5125 neutrophiles. September 21 his total white count had gone down to 13,000, eosinophiles 5148 and neutrophiles 4750. Notice was then called to the fact that although the neutrophiles varied in number they were never very high, 9000 being the result of the first examination. After the expulsion of the worm they dropped to 2900, and were again about normal, or 5000, at which they had since remained. The eosinophiles varied within wide limits, but were always much greater than the maximum normal of 800 per mm. They had dropped from 6100 to 4900 and for some unknown reason rose again to 14,200.

Rapid Healing of Tubercular Bone Cavities.

DR. S. J. HUNKIN, after referring to the metallic and earthy fillings, called attention to a rapid means of closing these cavities by the natural bone growth. The process consisted in filling the cavity after operation with carbolic acid, allowing it to remain two minutes and then follow it with alcohol and pack with alcohol gauze, removing the packing as easily as possible to prevent bleeding. Dressings were repeated every four or five days. No douche was used, the dressings were simple, easily borne, not painful, and the result was a clean wound, with no discharge at any time, and rapid closing of the cavity. This had been in from 5 to 15 dressings in a series of 10 cases. He presented several cases showing the result of this treatment.

Surgical Treatment of Ulcers.

DR. D. D. CROWLEY read this paper and offered a few suggestions. In years past he had had fair success in the treatment of ulcers by freely incising the surface of the ulcer, including the callus. During the past year he had not completely dissected away the callus but had cut the callus margin into small semilunar flaps, with narrow skin attachments and had covered a considerable part of the ulcer surface with the same, making the flap a part of the skin boruering the ulcer with one end slightly attached. An oval incison is made one-fourth to one-half inch in length, which begins at the margin of the ulcer, is carried obliquely through the calloused skin, along the outside of the callus and then gradually inwards toward the margin of the ulcer but not to the ulcer, the narrow neck of skin carrying a sufficient blood supply to the flap. The flap outlined should be next separated from its basic or sub-attachment throughout. These flaps are coaxed as far toward the center of ulcer as their skin attachments permit. The flaps bleed and turn bloodless, but nearly all retain their vitality unless conditions are very perverse. The surface is dressed with aseptic gauze which is held in place respectively by the moderate pressure of adhesive plaster and bandage. The ulcer is subsequently dressed every three or four days as conditions indicate. At the first removal of the dressings following the plastic work, there is an entire absence of callus. The flaps are slightly shrunken, though generally they adhere to the ulcer surface and exhibit signs of vitality. In several instances he had carried on this plastic work in old ulcers where very few granulations were present and in the process of repair following, the small flaps would almost disappear during the repair of the ulcer. The author described this flap work from calloused margin of ulcer because he did not know that methods used by him had been resorted to by others, or mentioned in any of the publications.

Transverse Suprapubic Division of the Skin in Performing Abdominal Sections.

DR. HENRY J. KREUTZMANN had used this form of incision in several cases and recommended it because of, 1, the better view obtained of the organs operated upon; 2, the avoidance in a large proportion of the cases of a visible scar; and 3, the almost entire prevention of a subsequent hernia.

NEW YORK ACADEMY OF MEDICINE—SECTION ON PEDIATRICS.

Stated Meeting, Nov. 14, 1901.

Dr. William L. Stowell in the Chair.

Automatic Siphon for Separating Top-Milk of Any Desired Percentage.

DR. HENRY L. COIT, Newark, exhibited a siphon, devised by Mr. Charles A. Meade, of his city, for the ready separation of the top-milk preparatory to the home modification of milk for infant feeding. After dwelling on the many difficulties met with in practice in using siphons for this purpose, he said that this was the first of many siphons that seemed to him to have satisfactorily solved the problem. The siphon is made of three-eighths of an inch glass tubing, and has a funnel-shaped extremity to the longer arm. The siphon is started by filling it through this funnel with water or milk, and then closing the other end of the siphon with the finger while inverting the instrument and placing the longer arm in the milk bottle. On removing the finger the siphon begins to draw off the lower milk, and keeps this up until the level of the milk in the bottle corresponds with the level of the outer or shorter arm of the siphon, when it ceases automatically. By attaching different lengths of glass tubing to the outer arm by means of a rubber coupling it becomes a simple matter to have the action of the siphon cease at any pre-determined level, or, in other words, to leave behind in the milk bottle the desired number of ounces of top-milk.

DR. H. D. CHAPIN said that while this seemed to be a most excellent siphon, he had long ago discarded the use of siphons because of the difficulty of getting nurse-maids to use them properly. In their stead he now used his little tin dipper, and found it simpler and more accurate.

Foreign Bodies.

DR. SARA WELT-KAKELS exhibited a safety-pin which had been removed from the vagina of a child. It had given rise to a long-continued and most obstinate leucorrhea, which had not been cured until the discovery and removal of this foreign body. She also showed a skiagraph of a child from whose esophagus she had removed a penny.

The Value of the Widal Reaction in Children.

DR. MILTON A. GERSHEL presented a carefully prepared paper on this subject, based on observations made for over three years at the Mount Sinai Hospital. He had made use of Dr. E. Libman's method of testing, and had used a dilution of one in twenty and almost always specimens of dried blood. The paper was based on the results of 670 examinations made in 199 cases. Of this number, 84 cases had typhoid and 81 of these gave the Widal reaction. In the 115 other cases of febrile disorders none gave this reaction. The Widal reaction, he said, was of special importance in children because of the frequently atypical character of typhoid in young subjects.

Primary Intestinal Tuberculosis in Children.

DR. DAVID BOVAIRD, JR., said that the percentage of tuberculosis in cattle varied in different abattoirs from 12 to 18 per cent. The tuberculin test had shown in some places from 15 to 30 per cent. The chief danger was from the milk of tuberculous cattle. Ernst had found the tubercle bacillus in 5 per cent. of 114 samples of milk taken from cows in which there were no visible tuberculous lesions of the udder. The proportion of tuberculous cattle having tubercular lesions was quite small, some authorities placing it at 3 per cent. or less. Undoubtedly the action of the digestive fluid is sufficient to protect against tubercle bacilli in milk unless these are present in large number or the digestive organs are in an unhealthy state. He had been able to find only 16 reported cases in which the relation between the development of the intestinal tuberculosis and the infection of the milk with tuberculosis had been clearly shown. A good rule for the guidance of the pathologist in determining the source of a tuberculous infection was that the oldest and most advanced lesions are found in the lymph nodes connected with the tract through which the infection entered. He had collected 236 cases from German writers, with 29 reported cases of primary tuberculosis of the intestine, or 12 per cent. Again, French writers had reported 128 cases with no instance of primary tuberculosis of the intestine. The English report 748 cases with 136 examples of primary tuberculosis of the intestine, or 18 per cent., and there are 369 cases from American writings, with only 5 cases, or 1 per cent., in which the tuberculosis was primary in the intestine. The autopsy records of the New York Foundling Hospital show 250 cases of tuberculosis in children under five years, with only 5 primary in the intestine. This represented 11 per cent. of the autopsies done in that hospital.

DR. W. H. PARK said that the finding of a primary tuberculosis in the intestine was no proof that the infection had come from tuberculous milk; it was just as likely to originate from the ingestion of human tubercle bacilli. The speaker then referred to some animal experiments done during the past summer at the laboratory of the health department. Four calves, proven by the tuberculin test to be healthy, were fed for some time on large quantities of tuberculous sputum from human beings, and a fifth calf was kept as a control. At the end of three months the four calves had all responded to the tuberculin test, but two of these animals had remained apparently in good health. One animal was now emaciating.

DR. R. G. FREEMAN remarked that animal experiments on the introduction of tubercle bacilli into the bowel had shown that the animals develop a respiratory tuberculosis, which soon becomes more marked than the intestinal tuberculosis.

DR. BOVAIRD said that cases in which animals infected through the intestine develop advanced pulmonary lesions are rare, whereas it was the rule when animals are given bovine tuberculous material for the intestine to become infected before the respiratory tract.

DENVER AND ARAPAHOE MEDICAL SOCIETY.

Regular Meeting, held Nov. 12, 1901.

DR. H. G. Wetherill in the Chair.

Tent Life and Simplicity in Treatment of Phthisis Pulmonalis.

DR. WILLIAM K. ROBINSON said that formerly there was little difficulty in placing tuberculous patients on "ranches," but in the last few years a great dread has been inculcated in the minds of boarding-house and inn keepers so that it is now almost impossible for the invalid to secure a home in the country. This state of affairs suggested to him the necessity for establishing the Tent Colony. The plains were selected in preference to the mountains, because of the uniform temperature and other metereological conditions. The Colony is situated 30 miles from Denver; the soil is sandy; trees are in abundance. It is sufficiently far from the irrigation district to insure freedom from excessive humidity, and also from the city to escape smoke. The tents, arranged around the central building, are connected by canvassed vestibules. In the winter the beds are warmed with hot-water bottles, blankets are used instead of sheets; pajamas are made of heavy flannel with feet and hood. Patients use cheese cloths for expectorations, which are burned. Bedding is exposed to sun daily. The tents have board floors and sides 2 feet high. Bill of fare is composed of milk, eggs, vegetables and meat. They are instructed to spend most of their time exposed to the rays of the sun. They are required to bathe neck and chest with cold water every morning. Change of clothing is regulated according to weather. The ranch is supplied with current literature, games and horses.

The progress of the Colony during the last two years has been satisfactory. During the exceptionally cold weather last winter the patients slept in tents and suffered no inconvenience. Very few drugs have been used. Cod-lived oil, creosote and guaiacol have not been administered. Patients in the active stage of the disease are required to rest. It is better to err on the side of overcaution in prescribing exercise to such patients. Discussions and comparing of notes are discouraged. He recited cases that showed marked improvement, subsidence of the cough, increase in chest expansion, skin losing its paleness, catarrh and hemorrhages arrested; they become less sensitive, more hopeful, etc.

DR. HENRY SEWALL dwelt upon the great benefit derived from tent life, yet he thinks there are many disadvantages which have yet to be overcome. The tents are too hot in summer and too cold in winter. The food furnished in the ranches is in the majority of instances abominable. He is of the opinion that all cases coming under the observation of physicians should be watched for two or three months and the heart carefully and frequently examined. A heart that does not react well in a high altitude should be sent to a lower altitude.

DR. W. C. BANE related his experience of tent life in Glen Park where the system of cottage tents is in operation in which the disadvantages of canvas tents referred to by Dr. Sewall are overcome.

DR. J. A. WILDER ascribed the gratifying results of tent life and sanatoria to the fact that the patients are under the immediate control of the physician.

DR. J. CHASE said that absolute outdoor life is being practiced by thousands of healthy people in Colorado with the result that mortality among such communities is reduced to the minimum, they all enjoy rugged health, and very seldom require the aid of a physician. At one time the National Guard of Colorado camped for several months during a very cold winter, and not a case of pneumonia or bronchitis developed in their midst.

DR. WILLIAM P. MUNN said that several years ago a number of cases of smallpox in Denver could not be accommodated in the Hospital for Contagious Diseases. He had them placed in hastily constructed tents. While there were several deaths among the cases that remained in the Hospital, none died of those who lived in the tents.

Corneal Diseases Due to Smallpox.

DR. EDWARD JACKSON reported a case of a man aged 30 who came under his observation six weeks from the time he was taken with smallpox. Photophobia was intense; right eye was small; zone of pericorneal redness, gray infiltration of upper part of cornea. A few pustules extended into the infiltration. Vision equaled counting fingers at one foot, lids were hyperemic and swollen, left eye was normal. Applications of tannin and glycerin to everted lids and instillation of atrophic sulphate with bathing of the eye in very hot water, and the use of a solution of boric acid and holocain was employed. Within two days, pupil dilated fairly; eye was less sensitive. Two weeks later the vision improved to 4/60, and the eye appeared normal except for an intense haziness of the upper portion of the cornea.

A New Operating Table.

DR. T. M. HOPKINS exhibited a model of an operating table. He claims that what is commonly called surgical shock is in

many instances due to the fact that the patient remains for an hour or longer in contact with the wet and cold table, be it metal, glass or wood; that a physician in ordinary practice would never allow his patient to remain in a cold and wet bed, and that the patients undergoing an operation if conscious would strenuously object to such rough treatment. To overcome these objections he constructed a table the upper slab of which represents a tank which can be filled with hot water, the quantity and temperature being regulated by appropriate contrivances.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

PRESCRIPTION WRITING, VI.

(Continued from page 1630.)

Medicines Administered Combined and Individually.

The synergistic action of medicine must necessarily be borne in mind when one is writing a compound prescription; otherwise the results might prove disastrous to the patient. It should also be remembered that there is no organ of the body which is not subject to the action of more than one drug; a prescription may contain some constituents which act similarly to one another upon one organ and dissimilarly upon others.

In writing a simple prescription, the physician, knowing the physiologic dose and action of the drug, will meet with no difficulty; but by the combination of two or more active ingredients whose physiologic action is directed especially toward one organ, the calculation of the dose of each demands closer scrutiny.

The action of heart tonics, to illustrate more fully, may be referred to in this connection. There are many in this class, those in more common use being digitalis, strychnin, strophanthus and spartein. If the condition of the heart should demand digitalis one would ordinarily prescribe 10 to 15 minims of the tincture at a dose every four or five hours. However, if the combined action of digitalis and strychnin would better serve the purpose, the dose of each should be reduced accordingly. Such combination is commonly of great service, for the simple reason that the same effects are produced through different routes—digitalis acting upon the heart muscle directly and stimulating it, and strychnin producing the same results through the nerve supply.

Purgatives produce much better results and fewer subjective symptoms when a number of them are combined. The reason assigned is that, as different preparations act upon different parts of the intestine, the entire canal is in this way best reached. Catharsis induced by a medicine which irritates the inner lining membrane of the intestine alone is not as satisfactory as when a mild irritation of both the membrane and muscular coat is produced.

Butler gives a good illustration as to the value of the combining of remedies which act similarly upon some organs and dissimilarly upon others, as demonstrated by the effects of chloral and morphin. Chloral produces sleep by its action on the brain, and also has a distinct influence on the heart, but none on the intestinal tract. Morphin acts on the brain and has little influence on the heart, but has a powerful effect on the intestine. The two produce a combined influence on the brain, promoting sleep, with the least possible disturbance of the heart and intestinal tract.

Sometimes a remedy is required, extremely nauseating to the taste, which the patient will refuse to take; if it can be combined with a menstruum, making it a pleasant preparation, the proper results will be obtained. In prescribing for children the preparations should be made pleasant and palatable, otherwise the physician will obtain the ill-will of his patient, which is a great obstacle in the way of a successful management of the case.

The chief object of every practitioner, however, should be to prescribe as few remedies as possible and to avoid the use of any medicine, the physiologic action of which he is not familiar with. It is very desirable to administer some remedies alone. In the treatment of certain stages of syphilis, for example, potassium iodid is of great service, given in gradually increased doses until 90 to 150 drops of the saturated solution, perhaps, are given three times a day; consequently it would not be practicable or convenient to combine this with a menstruum because of the difficulty in graduating the dose. Arsenic is another drug of specific action, and in order to obtain its best physiologic effects, gradually increased doses should be given, in the form of Fowler's solution, which is of 1 per cent. strength; to administer it in any other form would make it difficult to graduate the dose in such a manner that no disturbance of the stomach would follow.

(To be continued.)

Antipyrin in Chorea.

The following combination containing antipyrin is recommended in treatment of chorea:

℞. Sodii bromidi		
Potassii bromidi, āā	℥i	4
Antipyrin	gr. xxx	2
Aq. menthæ pip. q. s. ad	℥i	32

M. Sig.: One teaspoonful three or four times a day according to the age.

As a heart stimulant alternating with the above:

℞. Tinct. adonis vernalis	℥i-℥iii	4-12
Elixiris simplicis q. s. ad	℥i	32

M. Sig.: One teaspoonful three or four times a day, according to age.

Treatment of Chilblains.

The following is recommended in the form of a liniment:

℞. Olei rosmarini		
Olei camphoratæ		
Sol. plumbi subacetatis, āā	℥i	32

M. Sig.: Apply locally to the affected parts.

Morgens recommends the following:

℞. Tinct. iodi	℥ii	8
Acidi tannici	℥i	4
Collodii	℥x	40

M. Sig.: Apply locally.

In chilblains when the skin is broken, the following is recommended by the *Western Druggist:*

℞. Zinci sozciodol	℥iiss	10
Vaselini	℥v	20
Ceræ flavæ	℥vi	24
Olei olivæ	℥i	32
Terebinthinæ (Venice)	℥i	32
Balsami peruvianæ	℥i	4

M. Sig: To be applied locally.

Frost Bite.

The following is recommended by Lassar:

℞. Acidi carbol.	℥ss	2
Ung. plumbi	℥x	40
Lanolini	℥x	40
Olei olivæ	℥v	20
Olei lavendulæ	℥ss	2

M. Sig.: As a local application.

The following, containing ichthyol, is of great service in treatment of frost bite:

℞. Ichthyol		
Resorcin		
Acidi tannici, āā	℥iii	12
Aq. destil.	℥ii	64

M. Sig.: Shake and apply locally twice daily if the skin remains unbroken.

Treatment of Pertussis.

H. H. Haralson, as stated in the *Monthly Cyclopedia of Pract. Med.*, recommends for a child two years of age, two drops of the tincture of belladonna three or four times daily,

and gr. 1/150 to gr. 1/80 of heroin every four or five hours. The two remedies may be combined in one prescription, as follows:

℞. Heroin hydrochlorid. .....gr. 1/8 to 1/4 |008-015
Tinct. belladonnæ .....3ss 2|
Spts. frumenti .....ʒss 16|
Syr. simplicis q. s. ad.....ʒii 64|
M. Sig.: One teaspoonful every five or six hours.

Treatment of Arthritic Eczema in Children.

The following is recommended by Comby as noted in *Amer. Med.*:

℞. Sodii bicarb.
Magnesiæ calcin., āā.....gr. iii |20
Pulv. nucis vom. .....gr. 1/8 |008
M. Ft. chartula No. 1. Sig.: One such to be taken before each meal in a teaspoonful of milk.

Local treatment should consist in the application of zinc ointment to which menthol or salicylic acid has been added in small amount. The following makes a splendid combination:

℞. Acidi borici |
Zinci oxidi, āā.....gr. xxx 2|
Vaselini |
Adipis benzoinatis, āā.....3v 20|
M. Sig.: Apply locally.

And the following as a dusting powder:

℞. Acidi salicylici .....gr. xv 1|
Pulv. talci |
Pulv. amyli |
Lycopodii, āā .....3v 20|
M. Sig.: Apply locally as a dusting powder.

Treatment of Night Sweats in Tuberculosis.

J. Straussberger, in *Ther. Monats.*, states that while atropin has proven to be a powerful medicine in checking the night sweats of tuberculosis, yet its action is harmful to the digestive system of the patient. He recommends as a substitute a preparation containing formalin, viz., tannoform, as a harmless powder, which can be intrusted to the patient to apply himself; he states that it does not irritate the skin as pure formalin does and yet acts as well in checking the sweats. He prescribes it in the form of a dusting powder as follows:

℞. Tannoform .....ʒss 16|
Pulv. amyli .....ʒiss 48|
M. Sig.: Apply locally by means of a pad of cotton-wool.

Medicolegal.

Expressions Showing Expectancy of Death.—The Supreme Court of Florida holds, in Clemmons vs. State, 30 Southern Reporter 699, that any expressions of one mortally wounded at the time of making an alleged dying declaration, tending to show that he then believed his death was imminent, are admissible in evidence for the purpose of determining whether the declaration then made was in fact a dying declaration. The dying declarations of a deceased person relating to what was said by him or the accused, and what happened between them at the time of the fatal encounter, it holds, are properly admissible in prosecutions for unlawful homicide.

City Not Liable for Detention of Smallpox Suspects.—The Supreme Court of North Carolina says that it must be admitted that the party suing in the case of Levin vs. the City of Burlington received heroic treatment, and was damaged. According to his allegations, he was a peddler by occupation, and stopped one night at a boarding house in the city, leaving the city in the morning. A police officer followed him some nine miles, and arrested him on a warrant from the mayor. He was taken back to the city and compelled to stay for twenty-one days in the house he had lodged in overnight, because a case of smallpox had been discovered in the house, although he protested that he had not been exposed to the disease, and even offered for his own quarantine elsewhere. Besides, he alleged that he had been forced to undergo vaccination twice during his confinement, and alleged loss in his goods and injury to his horse from its use and bad treatment by the authorities. But, notwithstanding all this, the Supreme Court of North Carolina holds that he had no cause of action for damages against the city. It says that if he was arrested and detained by the officers of the law, under the process of the law, and for the purpose of enforcing the law, he had no right of action, unless he could show malice or improper conduct on the part of the officers in its execution. Then his right of action would be against the party or parties maliciously instituting the proceedings, or the officers for improper conduct in making the arrest and detention. Again, it says that, in this case, the officers seemed to have been acting under the statute, and that it is settled in that state that a municipal corporation can not be held liable for the enforcement of a public law for the public good.

Test of Responsibility for Crime, Defense Insanity.—In the murder case of the State of Maine vs. Knight it was earnestly contended by counsel that an uncontrollable insane impulse to commit a criminal act might co-exist with full knowledge of the wrongfulness of the act, and that the legal test of responsibility for crime afforded by the knowledge of right or wrong, respecting the act committed, had proved to be insufficient and unsatisfactory. It was accordingly insisted that the time had arrived when this criterion of responsibility could be safely modified by incorporating into the rule the element of irresistible impulse. To this the Supreme Judicial Court of Maine replies that it is undoubtedly true that in the progressive development of the medical jurisprudence of insanity more enlightened views have gradually prevailed respecting the functional activity of the mind, and the course of symptoms indicating mental disease, and that just conclusions have more frequently been reached by courts and juries in recent years in regard to the relation of insanity to criminal responsibility. But since the announcement of the decision of this court in State vs. Lawrence, 57 Me. 574, in the year 1870, this abstruse and difficult question has been the subject of exhaustive re-examination and renewed study, in the light of all modern discoveries of scientific truth bearing upon it by the most eminent medical and legal jurists in this country and England, and by courts of the highest authority in both countries; and it is still held by an overwhelming weight of judicial authority that, when the insanity of the accused is pleaded in defense, the test of his responsibility for crime afforded by his capacity to understand the nature and quality of the act he was doing, and his mental power to distinguish between right and wrong with respect to that particular act at the time he committed it, is the only proper legal criterion; and that, when fully developed and explained to the jury, in its application to the special facts and circumstances of different cases, it will always be found adequate to meet the demands of justice and humanity toward the accused, as well as to insure the protection and safety of the public. So, this court still adheres to the old rule, approved in the case above mentioned. It further says that it is evident that much of the diversity of opinion or difference in modes of expression upon this subject arises from a failure to discriminate between that irresistible impulse produced by an insane delusion or mental disease which had progressed to the extent of dethroning the reason and judgment and destroying the power of the accused to distinguish between right and wrong as to the act committed, and that uncontrollable impulse which is alleged to arise from mental disease, and to coexist with the capacity to comprehend the nature and wrongfulness of the act, but which may, with equal reason and consistency, be attributable to moral depravity and criminal perversity.

Medical Attendance for Employes—On Injured Miners.—The Supreme Court of Montana says, in the case of Spelman vs. the Gold Coin Mining and Milling Company, that the implication of a promise, one the part of one who requests the performance of medical or surgical services for another, to pay for them, does not arise unless the relation of the person making the request to the patient is such as raises a legal obligation on his part to call in a physician and pay for the services.

To make him liable, there must be an express promise or engagement to pay by the one who called in the surgeon or by his authorized agent. This is also true with regard to corporations. In this case, certain employes of the mining company were injured by the explosion of a blast, while working in its mine, and, so far as appeared, without its being in anywise at fault. One of them was the assistant manager and foreman. Being taken with the others to a hospital, he told the surgeon that the company would pay all the expenses incident to their treatment. The general manager also promised that it would pay all expenses for their treatment. But the court holds that the company was not thereby rendered liable. It does not think that the general manager had any implied authority, under the circumstances, to bind the company by employing physicians and surgeons. Besides, it says that while there can be no doubt of the implied power of a corporation of the class to which this one belonged to incur expense on account of injuries received by its employes in the line of their employment, in the absence of any express statutory grant of such power, the law unquestionably is that such a corporation does not owe to its employes any implied legal duty to do so. It would not seriously be asserted that a natural person owes to his servant or employe the legal duty to furnish medical or surgical aid to him, or to nurse him when sick or disabled, or when injured while working for the master or employer. Indeed, the court apprehends the law does not impose such obligation upon him in any event without an agreement by which he assumes such burden. For instance, a servant suffers a bodily injury through the actionable negligence of the master; although the master must answer to the servant in damages for all loss proximately resulting, including physicians' and surgeons' charges, yet the law does not require him to engage their services, or to pay them for performing the services. He may, if he chooses, employ physicians, surgeons and nurses, and promise to pay them, and, of course, he would then be liable directly to those employed. Whether or not, in such a case as the one last suggested, the general manager of a mining company can bind his principal, the court says it was not necessary to decide on this appeal, because, as has been said, there was nothing to indicate that the company was at fault, or that it had agreed with the wounded men to provide surgeons or physicians for them in case of accident. If the directors had met and employed them to attend the men, they would have bound the company; but the directors would not thereby have performed a duty imposed by law upon them or upon the company. Beyond doubt, also, the corporation, through its board of directors—its governing body—possessed the right at any time to delegate the exercise of this power to any officer or person.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

American Medicine (Philadelphia), December 7.

1 *A Century of Vaccination. Floyd M. Crandall.
2 The Diagnosis of Smallpox. Jay F. Schamberg.
3 *Tetanus Appearing in the Course of Vaccinia; Report of a Case. Robert N. Willson.
4 *Vaccine Production and Vaccination. George G. Groff.
5 Report of a Case of Compound Comminuted Depressed Fracture of the Skull, Cerebral Abscess, Cerebral Hernia; Operation; Recovery. G. W. Spencer.
6 *Shall Massage of the Stomach Be Recommended? A Study of Six Cases. (Concluded.) Mark I. Knapp.
7 *On the Use of Gärtner's Tonometer. Leroy Crummer.

Philadelphia Medical Journal, December 7.

8 Congenital Defect of the Forearm, Absence of the Radius, Club Hand, etc.; Plastic Operation. Roswell Park.
9 Splanchnoptosis. (Continued.) Byron Robinson.
10 *Statistics of Typhoid Fever at the Philadelphia Hospital from January 1, 1897, to December 31, 1899. Herman B. Allyn.
11 *Hypodermoclysis in Pediatric Practice. W. C. Hollopeter.
12 Amyotrophic Lateral Sclerosis: With Report of a Case. Thomas L. Coley.
13 *A Case of Sterility in the Male, Due to Dead Spermatozoids—Cured by Galvanism. Gustavus M. Blech.

Medical Record (N. Y.), December 7.

14 *Some Observations on the Borderland Between Medicine and Surgery. George Woolsey.
15 The Expectant Treatment. Robert H. Bakewell.
16 *The Psychic Half. J. Allen Gilbert.
17 *Spasmodic Bronchostenosis. Albert Abrams.
18 The Hemorrhagic Diathesis in Relation to Operation on the Nose and Throat. E. Harrison Griffin.
19 The Treatment of Xanthoma of the Eyelids. Fred. J. Leviseur.

Medical News (N. Y.), December 7.

20 *A Case of Suture of a Stab-Wound of the Heart, with Remarks on, and a Table of, Cases Previously Reported. George T. Vaughan.
21 When and How to Introduce the Stomach-tube. Mark I. Knapp.
22 *The Pathology and Treatment of Bilocular Stomach, with a Report of Two Cases. Charles G. Cumston.
23 *Some Unusual Localizations of Tuberculosis. Frederick A. Baldwin.
24 Nephrectomy for Severe and Prolonged Mononephrous Hemorrhage. Granville MacGowan.

New York Medical Journal, December 7.

25 *Ulceromembranous Angina Associated with the Fusiform Bacillus (Vincent); A Report of Twelve Cases in Children. Jacob Sobel and Charles Herrman.
26 *Appendicitis. John B. Deaver.
27 Report of a Case of Interstitial Pregnancy. R. H. Pierson.
28 The Daily Medical Inspection of Schools. (Continued.) D. S. Lamb.
29 *On a New Principle in Nephropexy. Carl Beck.
30 How Do You Use Quinin for the Prevention and Cure of Malarial Disease, and What Other Treatment Do You Employ? (Concluded.) Christopher C. Beling, P. R. Egan, William C. Griggs.

Boston Medical and Surgical Journal, December 5.

31 *Hernia Epigastrica and Fatty Tumors in the Epigastrium. (Concluded.) Howard A. Lothrop.
32 One's Health in Egypt. (Concluded.) F. Gordon Morrill.
33 *The Similarity of the Early Symptoms of Simple Abdominal Contusion and One Accompanied by Severe Intestinal Injury; the Need of Exploration; Celiotomy as an Early Routine Measure. John T. Bottomley.
34 *The Scope of Vaginal Section in the Treatment of Pus in the Pelvis with a Report of 82 Abdominal Sections Without Mortality; and 18 Vaginal Sections with One Death, Due to Accidental Causes. Edward Reynolds and L. V. Friedman.
35 Prostatic Calculus Removed Through Perineal Section. Charles G. Levison.
36 The Treatment of Piles by the Injection of Carbolic Acid. George W. Gay.

St. Louis Medical Review, December 7.

37 Chloroform in Labor. W. E. Gordon.
38 A Case of Circular Tumor and Hydrocephalus. T. A. Martin.

Cincinnati Lancet-Clinic, December 7.

39 Management of Face Presentations. Magnus A. Tate.
40 Subcutaneous Wounds of the Kidney. P. C. Layne.

Virginia Medical Semi-Monthly (Richmond), November 22.

41 Benefits of Medical Societies; The Value of Papers and Their Discussion; of Pathologic Specimens; of Social Features, Etc. Wm. P. Carr.
42 Hemiplegia. Francis D. Bishop.
43 Brain Softening. Michael Campbell.
44 *Presidential Address, Southern Surgical and Gynecological Association. Manning Simons.

Northwestern Lancet (Minneapolis), December 1.

45 *Some Experimental Surgery of the Intestinal Tract. A. E. Benjamin.
46 *Some Experimental Surgery of the Gastro-intestinal Tract. R. E. Cutts.
47 False Membranes or Air-Passages Complicating Measles. J. F. Corbett.
48 A Visit to London Hospitals. J. H. Rishmiller.

The Medical Age (Detroit, Mich.), November 25.

49 Ship's Surgeon's Infiltration Anesthesia. Hal C. Wyman.
50 A Few Don'ts (Gonorrhea). Frederick W. Robbins.
51 Treatment of the Eye by the General Practitioner. George H. Gorhan.

Medical Fortnightly (St. Louis), November 25.

52 *The Scientific Study of Accidents. J. Howe Adams.
53 A Contribution to the Newer Materia Medica. A. A. Nefe.
54 Massage. F. Savary Pearce.
55 Diseases of the Stomach. J. M. G. Carter.

Interstate Medical Journal (St. Louis), November.

56 Carcinosis of the Internal Genital Organs in the Female. George Gellhorn.

57 *Some Phases of Nephrolithiasis. A. H. Cordier.
58 A Case of Osteoma of the Orbital Plate of the Frontal Bone, Brain Abscess and Thrombosis of the Cavernous Sinus. J. W. Charles and M. B. Clopton.

Illinois Medical Journal (Springfield), December.

59 *Tuberculous Peritonitis in Childhood; Report of a Case. A. C. Cotton.
60 *The Treatment of Fecal Fistula and Inoperable Pathological Conditions of the Intestine by Exclusion of the Same. Carl Beck.
61 Purulent Ophthalmia of the Newborn. Willis O. Nance.
62 The Doctor as an Ethical Leader. Margaret T. Shutt.
63 Rhinoliths. J. Whitefield Smith.

Pennsylvania Medical Journal (Pittsburg), November.

64 Address in Otology. Ernest U. Buckman.
65 *A Few Reasons for Early Operation in Acute Mastoiditis. William H. Dudley.
66 *Gumma of the Ciliary Body. Edward Stieren.
67 *Treatment of Contagious Diseases of the Eye by the General Practitioner. S. Lewis Ziegler.
68 *Two Cases of Progressive Muscular Dystrophy in Brother and Sister. Augustus A. Eshner.
69 Use of Hydrobromate of Hyoscin in the Treatment of Chorea. W. Brown Ewing.
70 *Prognosis in Neuritis. F. Savary Pearce.
71 *Some Cases of Hysteria. Edward E. Mayer.
72 *Some of the Ocular Affections of Childhood Associated with Impairment of General Nutrition. S. D. Risley.

Transactions of the Chicago Pathological Society, November 11.

73 *Histo-pathology of the Pancreas in Diabetes Mellitus. Maximilian Herzog.
74 Sections of a Glioma of the Retina Stained by Mallory's Neuroglia Stain. Brown Pusey.

Louisville Monthly Journal of Medicine and Surgery, December.

75 Climate and Tuberculosis. A. H. Davidson.
76 Treatment of Nasal Hemorrhage. Adolph O. Pfingst.
77 The Marriage of Syphilitics—A Reply. G. Frank Lydston.
78 A Reply. J. M. Mathews.
79 Pathology of Goiter. James S. Chenoweth.

American Gynecological and Obstetrical Journal (N. Y.), November.

80 Suturing Without Knots, More Particularly in Wounds of the Abdominal Varieties. Richard H. Gibbons.
81 Infections of the Soft Tissues of the Female Pelvis; Diagnosis and Treatment; Report of Cases. J. E. Allaban.
82 *The Mode of Incision in Vaginal Section. J. Clarence Webster.
83 The Treatment of Congenital Talipes Equinovarus. Frank E. Peckham.
84 A Case of Sudden Death After Labor, with Autopsy. J. N. Hall and Alice T. Moore.
85 Simple Stricture of the Bowels and Hydronephrosis Caused by a Blow upon the Abdominal Walls. L. Brannon.
86 Carcinoma of the Female Urethra; Report of Cases. C. Jeff Miller.

Bulletin of the Johns Hopkins Hospital (Baltimore), October.

87 *Carcinoma of the Male Breast. Louis M. Warfield.
88 Report of a Case of Carcinoma Diagnosed by Means of Paracentesis Abdominis, with Some Remarks on the Diagnostic Value of Examinations of Serous Effusions. Walter Ralph Steiner.
89 A Case of Primary Adeno-carcinoma of the Fallopian Tube. Elizabeth Hurdon.
90 *Lipo-myoma of the Uterus. J. H. Mason Knox, Jr.
91 Chorea with Embolism of Central Artery of Retina. Henry Thomas.
92 Volvulus of Meckel's Diverticulum, with Recovery After Operation. William J. Taylor.

Annals of Ophthalmology (St. Louis), October.

93 Observations with the New Electric Ophthalmoscope. Hugo Wolff.
94 The Pathogenetic Eventuations of Chalazial Tumors. M. F. Weymann.
95 *The Treatment of Recent Embolism of the Retinal Arteries by Deep Massage, with Report of Two Cases Cured by This Method. H. V. Würdemann.
96 *Optic Atrophy Following Hematemesis. James D. Barrett.
97 Residual Sensations as a Test for Diplopia with Description of a New Method for Measurement of Ocular Muscle Imbalance. Clinton F. Cooke.

Woman's Medical Journal (Toledo, Ohio), October.

98 Fibroma of the Integument the Cause of Pain, Diagnosed as Articular Rheumatism. Anna M. Lieser.
99 Lacerations of the Pelvic Floor and Their Effects. Sara A. Janson.

Proceedings of the Philadelphia County Medical Society, October.

100 *The Aspect of Disease as Seen in Arctic Alaska. Ernest W. Kelsey.
101 *The Force of the Blood Current as a Cause of Variations in Heart Murmurs, Illustrated by a Case of Cardiac Inhibition, with Loud Cardiac Murmur, and by Fluoroscopic Studies. Roland G. Curtin.
102 A Note on the Treatment of Diphtheria. John W. Swan.
103 Report and Exhibition of a Fibroid Tumor Removed by Supravaginal Hysterectomy. George E. Shoemaker.
104 Removal of Lumbar Glands for Malignant Disease of the Spermatic Cord. John B. Roberts.
105 Triple Ectopic Gestation. Wilmer Krusen.
106 Pertinent Observations Concerning Appendicitis in the Female. Andrew J. Downes.
107 The Treatment of Locomotor Ataxia, with Special Reference to the Treatment by Educational Exercises. John H. W. Rhein.

Toledo Medical and Surgical Reporter, December.

108 Lesions of the Nervous System Due to Syphilis. William Wickham.
109 The Best Alkaline Wash. W. Harpur Sloan.
110 The Mucous Polyp—Its Causation and Cure. Lorenzo B. Lockard.
111 Applied Anatomy of the Vagina. Byron Robinson.
112 Vaginal Fistula—Operation Refused. T. J. Briggs.

Archives of Ophthalmology (N. Y.), November.

113 *Descemetitis a Symptom of Inflammation on Any Portion of the Uvea: Serous Iritis Not a Disease per se. Henry D. Bruns.
114 *A Case of Endothelioma of the Lachrymal Gland (Myxochondo-endothelioma Cylindromatodes), with an Analysis of Previously Reported Cases of Lachrymal Gland Tumors. Aldred S. Warthin.
115 *Anisometropia. Alexander Duane.
116 *On Torticollis in Cases of Vertical Deviation of One Eye. Karl Dallwig.
117 A Case of Homonymous Hemianopsia of Cortical Origin with Peculiar Disturbances in the Remaining Halves of the Fields. Th. Gelpke.
118 On Traumatic Degeneration of the Retina. E. Adamuck.

Colorado Medical Journal (Denver), October.

119 *Mountain Fever, So-called. W. W. Woodring.
120 Symptoms, Diagnosis and Treatment of Chronic Nephritides. H. R. Bull.
121 The Administration of Anesthetics in Renal Diseases. William Dow.
122 Renal Hematuria and Nephrolithiasis. Frank Finney.
123 X-ray in diagnosis of Kidney-disease. George H. Stover.
124 The Kidneys During Pregnancy. T. Mitchell Burns.
125 How I Conduct a Case of Normal Labor. M. D. Gibbs.
126 A Case of Acute Hemorrhagic Pancreatitis, with Diagnosis Confirmed by Autopsy. O. J. Pfeiffer.
127 An Unusual Sequela of Pneumonia. W. T. H. Baker.

Chicago Clinic, November.

128 Guaiacol Treatment of Laryngeal Tuberculosis. J. Homer Coulter.
129 Medical Versus Surgical Treatment of Appendicitis. D. B. Eaton.
130 Nervous Children. Marcus P. Hatfield.

The American Journal of Anatomy (Baltimore), November.

131 Development of the Limbs, Body-Wall and Back in Man. Charles R. Bardeen and Warren H. Lewis.
132 *The Intralobular Framework of the Human Spleen. Preston Kyes.
133 Studies on the Neuroglia. G. Carl Huber.
134 *The Normal Histology of the Human Hemolymph Glands. Aldred Scott Warthin.
135 On the Morphology of the Pineal Region, Based upon Its Development in Acanthias. Charles S. Minot.

Southern California Practitioner (Los Angeles), November.

136 An Unusual Case of Carcinoma of the Kidney, with Some Remarks on Early Diagnosis of Kidney Diseases. P. Newmark.
137 Early Physicians of Los Angeles. H. D. Barrows.
138 Hospitals and Sanatoria Founded, Owned and Controlled by the Medical Profession—A Case in Hand. H. Bert Ellis.

St. Louis Courier of Medicine, November.

139 *Retained Testicle, with the Surgical Features and Microscopic Findings in Three Cases. Willard Bartlett.
140 Cocain Spinal Anesthesia by Lumbar Puncture. C. E. Ruth.
141 *The Right-sided Anatomical Tripod. C. P. Thomas.
142 A Case of Appendicitis with Some Unusual Features. J. G. Moore.
143 *The Requirements of Modern Surgery. J. H. Carstens.
144 Spaying of Cows as a Means of Procuring More and Better Milk. L. F. Abbott.

Medical Times (N. Y.), December.

145 Bullet Wound of the Hand. Ewing Marshall.
146 Retained Placenta in Primaparæ. Thomas S. Bullock.

Charlotte Medical Journal, November.

147 *Asthenopia in Convalescence and Other Conditions of Lowered Vitality. Gaillard S. Tennent.
148 The Great Plagues of History. M. F. Carson.
149 A Government Duty. James Kilbourne.
150 Some Obscure Injuries Following the Toxic Use of Alcohol. T. D. Crothers.
151 A Child One and a Half Years Old, with a Single (4-penny) Nail in Its Windpipe—Some Other Cases of Foreign Bodies in the Trachea and Esophagus Reported. William Lewis Bullard.
152 "The Practical Management of Smallpox." M. K. Allen.
153 Can a Typical Case of Enteric Fever Be Broken Up? G. A. Davis.
154 The Pantherapist and Neurotherapeutics. C. H. Kermott.
155 Scarlet Fever—Its Treatment. James A. Knight.

Texas Medical News (Austin), November.

156 Prevailing Disease Conditions in San Antonio, Texas. M. J. Bliem.
157 Some Hints on Therapeutics. J. C. Anderson.
158 Medical Melange. R. E. B. Bledsoe.
159 Traumatic Tetanus—Report of a Case. S. C. Broadstreet.

Carolina Medical Journal (Charlotte, N. C.), November.

160 Past, Present and Future of Cancer. Stuart McGuire.
161 Report of Three Operations on the Bladder During August. Andrew J. Crowell.
162 Clinical Report of Diphtheria in Salisbury, N. C., During Six Weeks Ending October 1. J. Meigs Flippen.

Detroit Medical Journal, November.

162 Photograhy in Medicine. Heneage Gibbes.

AMERICAN.

1. **Vaccination.**—Crandall gives a historic résumé of the effects of vaccination, showing how variola has been nearly stamped out in Prussia by the operation. He sums up the lessons taught from experience in the following: "1. The first lesson can not be better stated than in the words of the Berlin Board of Health: 'Vaccination in infancy, renewed at the end of childhood, renders an individual practically as safe from death from smallpox as if that disease had been survived in childhood, and almost as safe from attack.' 2. The duration of the immunity conferred by vaccination is variable. In many individuals vaccination in infancy, and revaccination in childhood is sufficient for life protection. In a limited number, immunity is lost in five or six years. It is never possible to know with certainty to which class an individual belongs. In the face of an epidemic, therefore, vaccination of all who have not been vaccinated within five or six years, is giving what the lawyers call the benefit of a reasonable doubt. Every one who has been vaccinated in infancy and childhood, should be vaccinated not less than once in adult life. 3. The immunity conferred by vaccination is in direct proportion to the thoroughness with which it is performed, and this is shown with considerable accuracy by the character and number of the resulting scars. 4. Vaccination in infancy alone is not sufficient to wholly prevent smallpox among the adult population. 5. Optional vaccination has not proved sufficient to protect the community from smallpox. Compulsory vaccination is a measure warranted by more than a century of experience. 6. The mild compulsion enforced in this country, by requiring vaccination or evidence of its recent performance upon admission to the public schools, should have the hearty support of parents and physicians alike."

3. **Tetanus in Vaccination.**—The Camden epidemic is the basis for Willson's paper and he disagrees with the circular sent out by the Camden Board of Health, especially in their statement that tetanus does not develop later than eight to ten days after infection. He reports a case and while he admits that in all the cases of tetanus it must be acknowledged that the incubation period was greatly prolonged, he still thinks that the statement made is incorrect. In his case the child's father was a coachman and another similar one is referred to. He believes the tetanus bacilli were carried from the stable to the child either by the father or someone else and he does not think that the chronic or delayed form has ever shown such a mortality as has occurred in this tetanus epidemic in Camden, N. J. Therefore, he holds that the cause in the several cases was probably subsequent to the original vaccination. The cases point to neglect on the part of physicians, not in the vaccination itself, but in properly watching the cases afterwards. The occurrence of tetanus should not influence careful persons against the only safeguard against smallpox, but should arouse the medical profession and the laity to studying the proceeding and adopting measures that will ensure the proper execution of the vaccination and subsequent supervision of the vaccine sore.

4. **Vaccine Production.**—Groff suggests the appointment of a commission, preferably by the American Medical Association, to investigate and report upon the following points: 1. From what tissue or pathologic product in the vaccinated animal should the virus be taken, and at what time after vaccination. 2. What is a typical vaccine vesicle, stating accurately the appearance on different days, and what is a typical vaccine scar. 3. Means of positive diagnosis of the "mild form of smallpox in which there are no deaths." He has come to the conclusion that when a smallpox epidemic is present the virus supplied physicians is much more attenuated than is the case when such epidemic does not exist. He notes the methods of preparation of different firms and says that in the 800,000 vaccinations made in Porto Rico by the military government under his direction with virus produced on the ground, neither the scab, the lymph from the sore, nor the granulating tissue under the scab were used; only the product containing the virus.

6. **Gastric Massage.**—In the conclusion of Knapp's paper he holds that the effect of gastric massage is more psychical than otherwise and would recommend it simply for its psychic effect. Whatever good there is in massage the stomach is not adapted for it.

7. **Gaertner's Tonometer.**—The tonometer is of use according to Crummer in the following conditions: In diagnosis by eliciting the tension in cases in which the mean blood pressure is symptomatically changed; in prophylaxis in keeping tract of the blood pressure where we desire to have the earliest possible knowledge of lack of compensation found in valvular lesions and in kidney diseases; in prognosis in acute cases, in judging the maintenance of the power of the heart, read directly by means of the instrument; therapeutically as a measure of the effect of drugs or other treatment given for the production of changes of arterial tension.

10.—See abstract in THE JOURNAL of October 19, p. 1058.

11. **Hypodermoclysis.**—Hollopeter has been employing hypodermoclysis in some of the ailments of early life and finds it of great value in specially selected cases. His technique is given as follows: In afebrile cases, such as are found in general atrophy, wasting following infectious disease, etc., the solution should be at least 115 to 120 degrees and delivered to the tissues at 106. This temperature must be kept up throughout the procedure. The injection may be made either by a large hypodermic syringe or by gravity if suitable apparatus is obtainable, but this is slow. He thinks in very young children the old-fashioned large antitoxin syringe holding one to two ounces, after being thoroughly sterilized by boiling, is filled with normal saline solution of the proper temperature, which is injected into the flank or into the inner surface of the thigh above the knee, or preferably near the great trochanter, on the outer aspect of the lower extremities, this being the area of least sensibility and is also free from pressure when the child is lying down. It may be necessary to benumb the skin by the application of pieces of ice for a few minutes or a little atomization with sulphuric ether. It is never necessary to introduce the fluid with a large syringe so rapidly as to produce swelling. When the tissues are wasted or starved by loss of blood they will drink up the fluid much more rapidly than when the body is full of fluid and toxins. Several cases are reported and he says in conclusion that the method offers a very wide field of clinical usefulness. The appearance of a surgical procedure may frighten young children or the family, but in spite of this, he finds it an unusually powerful remedy that has given him far better results than any simple procedure ever

tried. To recapitulate, its chief fields of usefulness are in hemorrhage in the newborn, from the genitals or umbilical cord; in purpura; in cases of general wasting from intestinal disturbances; and especially the toxemias associated with the acute eruptive fevers, scarlet fever and diphtheria claiming an especially high degree of usefulness. In syphilis and in tuberculosis it is a therapeutic measure which aids very materially the uses of other means to effect restoration.

13. **Sterility in the Male.**—Blech reports a case where, probably following specific urethritis, there was a condition of sterility accompanied with a few dead spermatozoa in the semen which was cured, contrary to his expectations, by the use of negative galvanic applications to the prostatic urethra, 5 to 12 milliamperes, lasting 5 to 8 minutes. The indifferent pole was placed on the back. He does not attempt to explain this cure after 11 years' diseased condition and blames himself for not having examined or properly treated the urethra in the case.

14. **Borderland Conditions.**—The special borderland conditions between medicine and surgery noticed by Woolsey are carcinoma of the stomach and appendicitis. In regard to the latter he believes in early operation, as diminishing the unnecessary element of mortality. Improvement is needed, he thinks, in medical practice in the line of early diagnosis, especially in the cases of malignant new growths and septic processes. The responsibility rests with the physician to not only make an early diagnosis but to call in the surgeon to apply appropriate treatment.

16. **The Psychic Half.**—Gilbert's article is a protest against the materialistic methods of thought and expression in medical and other literature. Medicine is not justified, he says, in looking at the cases entirely on the physical side. Experimental psychology has promised much more than she has fulfilled or ever can fulfill. He specially criticises the attempt to define consciousness by physical terms, explaining the psychic realities by chemical and other theories.

17. **Bronchostenosis.**—After describing the symptomatology of bronchial spasms Abrams maintains that many cases of bronchitis are merely cases of bronchial spasm which can only be relieved by climatic change, and he emphasizes particularly the value of iodid of potash in this condition. In his experience it is a specific, though it must be given with circumspection. The medium daily dose is about 30 gr., though 60 is not excessive when no idiosyncrasy is shown. We must specially guard against iodism; individuals with defective renal apparatus are especially liable to this. The promotion of diuresis by drinking largely of water or milk may obviate iodism. Belladonna in the form of tincture, 5 drops with each dose of iodid of potassium, will prevent the objectionable coryza. If digestive disturbances occur Fowler's solution may be given and Briquet suggests bicarbonate of sodium, and sulphanilic acid has been given for a similar purpose. He offers the following formula as of value in certain cases of bronchostenosis:

R.	Iodid of potassium	ʒ 5
	Tincture of lobelia	ʒ 10
	Spirits of glonoin (1 per cent.)	m. 16
	Elixir bromid of potassium q. s. ad	ʒ 4

M. A teaspoonful three times a day after meals. This dose may be gradually increased if necessary.

20. **Stab-Wound of the Heart.**—Vaughan reports a case of stab-wound of the heart sutured some one-half to three-quarters of an hour after reception. The patient died of hemorrhage which was free with each pulsation through the wound. He analyzes the cases that have been reported, including some 26, in which there were 9 recoveries. It appears the ventricles are much more likely to be wounded than the auricles and the left ventricle most frequently. His conclusions are that the time has arrived when a wound of the heart should be operated on with as little hesitation as a wound of the brain, with the expectation of, under proper conditions, getting good results. The mortality will necessarily be high, not from the operation but from the injury, especially if all cases, including desperate ones, be undertaken. Cases that have survived five or more hours after receiving the wound will give a good percentage of recoveries, but such selection is not to be recommended. 2. In all cases of wounds in the region of the heart, with symptoms threatening life, an exploratory operation should be done by making an osteoplastic flap by dividing the fourth and fifth costal cartilages at their attachment to the sternum and ribs, about one inch external to their attachment to the cartilage, somewhat according to the method of Roberts. This flap turned up as a door on a hinge gives a good view of the pericardium and can easily be enlarged upward if more room is required. 3. While early and speedy operation is often essential to success, yet the importance of asepsis can not be too strongly emphasized on account of the great danger of pericarditis and empyema. If there has been much hemorrhage an amount of physiologic salt solution, approximately equal to the blood lost, should be injected into the vein while the surgeon is operating, if it has not been done before.

22. **Bilocular Stomach.**—Cumston's long article contains two cases in detail and covers the whole subject of bilocular stomach. No operation, he says, can be decided on before the abdomen has been opened and the condition therein ascertained. When the surgeon has become perfectly familiar with the anatomical condition present he may select the operation most applicable, which, taking all things into consideration, is usually gastro-anastomosis according to Doyen's and Woelfler's methods. It is, he believes, indicated in all cases of bilocular stomach, especially when the stenosis is long and narrow and where cicatricial atrophy of the cardiac pouch has occurred and there are a large number of adhesions. It is more rapidly performed than resection, and it is a more perfect operation because it re-establishes stomachic digestion in its entirety.

23. **Tuberculosis.**—Baldwin reports cases of tuberculosis of the hypophysis, of the intercostal tissues near the sternum with secondary tuberculosis of the axillary lymph glands, primary tuberculosis of the Fallopian tube with large tubercular veins in the ovary, tuberculosis of the thyroid, tuberculosis of the uvula and a case of tubercular adenomatous polyp of the cervix.

25. **Ulceromembranous Angina.**—Although this condition was previously recognized by French and Russian authors it has only been noticed within the last three years by Germans. Sobel and Herrman describe the localization, which is usually on the tonsil, most frequently on the right, the ulceration varying in size from that of the nail of the little finger to the involvement of the greater part of the tonsil, irregularly circular or oval and chancroidal in character. The depth varies from one-eighth to half an inch, and sometimes extends throughout the gland. In all the 12 cases examined there was some elevation of rectal temperature, in 4 ranging up to 101 and 103. With two exceptions the submaxillary glands were enlarged on the same side as the lesion and usually remained so for some time after the healing of the ulceration. The symptoms were usually entirely local, the fever rarely being high enough to produce constitutional symptoms. Clinically it differs from diphtheria in that it has an ulcerative process instead of a membranous. From confluent follicular amygdalitis it is distinguished by the absence or mildness of constitutional symptoms. The bacteriology of the condition is discussed at length and the organisms found described. The authors consider that the fusiform bacillus of Vincent is probably the special microbe of the condition on account of its uniform presence in such large numbers or in nearly pure culture, and the gradual disappearance during the process of healing, and its rapid destruction when the ulceration heals; the rarity of other micro-organisms and the fact that in some cases it seems to be transmissible. The prognosis is invariably good, a cure usually occurring within three weeks. The majority of cases were locally treated with silver nitrate, 3 to 5 per cent. In two instances Lugol's solution was used with apparently good results. Brief histories of the cases accompany the paper, with a bibliography.

26. **Appendicitis.**—Deaver maintains that every death from appendicitis is preventable, excepting, of course, the fulminating type, if the operation is performed in due season. The symptoms are not characteristic singly, but the diagnosis should be made by anyone from the three cardinal symptoms, pain, tenderness and rigidity. He maintains that it is unjustifiable to defer operation in any case after the diagnosis has been made. The condition of walled-off abscess is a most unfortunate state of affairs and not a favorable outcome of conservative treatment as is sometimes held.

29. **Nephropexy.**—The new principle announced by Beck consists in suspending the kidney, after having button-holed it on the fibers of the nearest muscle. He briefly reports a case. The principle of the method is similar to that of his modified method of ligamentopexis illustrated in the *American Journal of Obstetrics*, Vol. xlii, No. 8, 1900.

31. **Hernia Epigastrica.**—In the conclusion of his article Lothrop discusses the etiology, pathology, anatomy and symptoms of the condition. It may be due to embryonic defect, to weakness in the abdominal walls and to trauma, and there is evidence of the influence of properitoneal fat and terminal vessels and nerves in its causation. The fatty tumors and epigastric hernia are usually of slow origin and tend to develop at the point where the vessels pass forward through the anterior sheath of the rectus muscle, particularly in the linea alba. The steps of this process are given in the remarks on pathologic anatomy. It is quite possible that these elements may give rise to no disturbance whatever, but in the common type there is more or less gastro-intestinal disturbance with or without local pain. It is a good rule to examine the epigastrium in gastric disturbance to make sure as to this condition. The symptoms referred to the stomach may be nausea, vomiting, increased acidity, eructations and occasionally palpitation where the heart's action becomes embarrassed. The motile power of the stomach may be interfered with. Pain is commonly present. All of these symptoms usually follow a meal, sometimes in proportion to the amount of the ingesta. Tenderness may be present or absent in any case, and in some cases in fat patients the tumor may be difficult to be palpated. Tumors in the region of the epigastrium should suggest this possibility. The prognosis is not bad in cases where there are no symptoms, though it may give rise to symptoms at any time. If it causes any trouble treatment is indicated. Operation, however, is the only means of relief when symptoms are troublesome and it is very important to free the omentum from all adhesions, and recurrence is unusual.

33. **Abdominal Contusions.**—Bottomley has analyzed some 40 cases of abdominal contusions, equal numbers with and without severe intestinal injury, causing severe intestinal trouble, and analyzes symptoms. Pain was present in all the more severe cases, and is the most constant symptom and of no special diagnostic value. It was present in all but one of the simplest and mildest cases. Vomiting occurred both in the mild and severe cases. It was absent in 2 cases of intestinal injury and in 7 cases of simple contusions, and was not mentioned in 8 cases of the former and 3 of the latter class. Shock appeared as an intestinal symptom in 10 cases of intestinal injury and 7 of contusions of the abdominal wall. Muscular spasm was present at entrance in 11 of the intestinal injuries and 10 of simple contusions; it was absent in 2 of the more severe and 4 of the less severe injuries. Other symptoms were distension, tenderness, which is one of the most constant signs, external signs of violence which are not always present; dulness was present in the minority, and variations of the temperature, pulse, etc. Nothing definite was obtained from a study of these special symptoms. Of the 20 cases of injury of the intestine 19 died and 1 recovered; 11 were operated on and 9 treated expectantly. Of the latter all died. In simple contusions of the abdomen, the symptoms disappeared in an average of 4.4 days and the cases were discharged in 8 to 15 days. The general result of the study was that the physical signs respond neither to the amount of violence nor to the amount of injury done, and we have no means of distinguishing between simple abdominal contusions and one complicated by severe injury except by exploratory incision, and this to be of value must be done in a very short time, three to five hours after the injury.

34. **Vaginal Section.**—Reynolds and Friedman have, in their recent practice, abandoned the abdominal method of extirpation of infected tubes and other collections of pus in the abdomen and confined themselves to thorough drainage by the vagina without attempting the removal of the affected viscus, excluding, of course, cases of twisted pedicle, etc. The method of operating consisted in using a wide cut across the posterior fornix and frequently supplemented by continuing the incision in the median line, thus making a T-shaped cut. The first incision only penetrates the vaginal walls, but is always extended on the sides out to the pelvic walls and posteriorly as far as may be necessary; the flaps are dissected back and a similar incision is carried through each succeeding layer until the abscess mass is itself plainly in view; its wall is incised and the incision extended with scissors, or the fingers, until it is as wide as the original incision in the vaginal vault. All edematous inflammatory tissue is torn open with the fingers as far as possible and the cavity then lightly packed without douching. There is usually free venous hemorrhage, but this is due to back pressure on the veins and will cease as soon as the mass is reduced by the escape of its contents. They divide these sections into two classes: 1. Those in which a definite abscess cavity containing liquid pus (a pus-tube or encysted peritonitis) was isolated by a more or less heavy wall of inflammatory exudate. In this class the risk of general peritonitis is greatly diminished by this operation. Excellent drainage may be secured, severe post-operative shock is almost unknown, and vaginal hernia is a rare sequence. In the second class characterized by infiltration and subsequent degeneration of the cellular tissue of the pelvic septa, vaginal section gave no immediate and obvious results, but the result of section was a rapid drop in the temperature and pulse with marked symptomatic relief.

44.—See abstract in THE JOURNAL of November 30, p. 1481.

45. **Intestinal Surgery.**—Benjamin concludes that close approximation of the opposing surfaces preventing leakage and peritonitis can be best secured by the use of the Murphy button or the Czerny-Lembert or the Halsted sutures. Maintenance of the lumen, especially in the small intestine, is best secured by the Murphy button. However, where sutures are alone used and are carefully introduced, not allowing puckering to take place at the time, nor turning in too much, a small opening does not follow, as shown by his experiments. Adhesions around the exposed raw surfaces are best avoided by the use of the elastic ligature, though there is little chance of this occurring in Maunsell's operation. Where too many sutures are introduced there may be gangrene from cutting off of the blood supply. This is avoided by the Murphy button, and especially by the elastic ligature. The contents of the bowel are best prevented from infecting the wound by the use of the Murphy clamp or a tie of gauze around the intestine. Traumatism is avoided by using sutures of elastic ligature, but often caused by using the Murphy button. In the matter of time the Murphy button and elastic ligature take the lead. Of sutures the Halsted, which does not penetrate the mucosa and leaves less suture material exposed, is followed by fewer adhesions and makes a close approximation. When used by Connell's method still fewer adhesions result. Cushing's continuous suture is also very satisfactory. The square knot is the most suitable, and should be only firm enough to approximate the membrane. The continuous suture, apparently excepting Cushing's, is not very safe. It is likely to slough out in places unless anchored frequently by a half stitch. When the sutures penetrate the mucosa and are tied on the serous membrane, a peritonitis or infection by capillarity sometimes results. Care should be observed in putting in the mesenteric stitch and all stitches on the concave side of the bowel, to avoid cutting off the blood supply. The external row of sutures or an excess of stitching often causes gangrene. Na-

ture saves many cases by supplying an extra barrier to infection by the omentum plastering itself around the place of danger. This is well to remember as the omentum can easily be stitched around the questionable point.

46. **Gastro-Intestinal Surgery.**—Cutts describes and illustrates McGraw's plan of using the elastic rubber ligature for anastomosis. The technique is as follows: Hold the intestine firmly between thumb and finger; introduce a darning needle into the intestinal wall into the lumen of the bowel, passing the needle on for an inch and a half, again penetrating the wall of the intestine, and bringing the end of the needle out. While an assistant holds the bowel, make traction on both ends of the rubber ligature so as to make it as small as possible, and then draw the needle and ligature through the intestine at the desired amount. Now grasping the other loop of the intestine to be united, pass the needle and ligature through it likewise, but in a reverse direction; then tie a single knot in the rubber ligature, over which have the assistant tie a fine knot to prevent the slipping of the knot. Repeat the knot in the rubber ligature; likewise the silk thread to hold it. The loops of the intestine within the grasp of the ligature are thus greatly folded and massed together, but they straighten out and become perfectly smooth, leaving an opening between the intestinal walls varying in size with the amount of bowel included.

52. **Accidents.**—Adams gives the classification of accident insurance companies as to risks, which is of interest to physicians. Workers in nitroglycerin, soldiers in barracks or field service, professional baseball players, submarine divers, aeronauts, circus riders, and U. S. deputies supervising moonshine districts are excluded absolutely. Brakemen on freight trains, couplers, miners, and trimmers of electric light carbons are limited to $250 in case of death for which they must pay the premium of $30. Next comes the "specially hazardous" class, in which the insured must pay $25 per year and be limited to $1000 in case of death. Among these are cowboys, cattle-tenders, buzzsawyers, hunters, lumbermen, sawmill employes, and employes of furniture and sash, blind and door manufacturers running machinery. The next class is the "extra hazardous," who are compelled to pay $20 and be limited to $1500 in the average insurance company. Among these are railway engineers, firemen, conductors, bridge-builders and bridge-carpenters, sailors, well-diggers, wood-choppers, and employes in iron and steel manufactures. Next come the hazardous occupations who pay at the rate of $15 for $1000, and are generally limited to $1500. It is rather surprising that the farmer and farm laborer are included in this as well as the common laborer, dairymen, coal-heavers, icemen, telegraph linemen, quarrymen and cornice-setters. The blacksmith, butcher, carpenter, professional fisherman, and sea pilot are also included and the captains and mates on vessels. The extra-medium class which pays $12.50 yearly, limited to $1500, includes the bartender, cable and electric road employes, celluloid workers, distillery employes, volunteer city firemen, employes in glass factories and hostlers. Coming down to the ordinary risks entitled "medium," limited to $2000 at the rate of $10 per thousand, it includes most ordinary businesses, as house-painters, boat-builders, book-binders, bottlers, cabinet-makers, chocolate-makers, ferrymen, makers of agricultural implements, makers of bicycles and attendants on the insane. It also includes certain railroad employes, such as car-painters, car-cleaners, airbrake inspectors, truckmen at the stations, etc. It also includes the men who travel habitually on the Pullman cars, such as cooks in dining cars, hotel cars, porters and Pullman conductors who are considered to be less exposed to accident than the ordinary trainmen. The next division is that of the "extraordinary," where the amount is limited to $2000 at the rate of $8.50 per thousand and is rather an exclusive one, and contains such occupations as superintendent of furniture manufactures, who, while not actually running the machines, directs and makes repairs. The "ordinary risks" include such businesses as bartenders in first-class hotels, billposters, bookbinders, boiler inspectors, superintendents of buildings and a large number of trades. The "extra preferred" need pay only $6 per thousand and insure up to $5000, including general superintendents, supervising contractors, supervising proprietors, or manufacturers in the various lines of business. Insurance companies regard the men who supervise the work of their employes personally as not as good risks as if they confine themselves simply to office work. The next two classes, the preferred and the select, pay only $5 and $4 per $1000, and include persons employed in office work, ministers, typewriters, etc. Physicians are better risks than surgeons, and the city physician is better than his brother in the country. The city physician is put in the first class, the select, then the physician and surgeon with city practice only, while the country doctor and surgeon is put down on the ordinary, which is fourth from the top, for which he pays twice as much as his city brother, and is limited to half the amount of indemnity in case of accident or death from accident. This is the cold-blooded view which the accident companies take of the dangers of the country doctor's life.

57.—See abstract in THE JOURNAL of September 28, p. 849.

59.—**Tuberculous Peritonitis in Childhood.**—Cotton is dubious as to the necessity of surgical interference in tuberculous peritonitis in children and holds it probable that similar hygienic conditions to the usual post-operative ones might have an equally good effect. Put the affected part at rest as far as compatible with good nutrition. Give concentrated liquid diet to diminish peristalsis, keep the patient in the recumbent position to prevent diffusion of peritonitis and to economize energy. Abundant supply of fresh air and the maintenance of body heat are essential. The stools should be kept liquid without exciting undue peristalsis. Ascitic fluid should be evacuated as frequently as found necessary, and the abdomen, if large, should be supported by a bandage. The well-known action of creosote, guaiacol and iodin upon tuberculosis and the fact that these are eliminated by all the secretions, their presence in ascitic fluids having been demonstrated, suggests a promising field for their exhibition. Iodoform 10 per cent. with lanolin may be applied over the abdomen daily, and its internal administration is claimed to be beneficial. Cod-liver oil should not be forgotten. Protonuclein has found favor with some and should be theoretically indicated. In support of his view he reports a case thus treated, the only surgical operation being aspiration of the abdomen, and asks: If the apparent cure is real, has the improvement been influenced by therapy and would a laparotomy have produced any better results?

60. **Intestinal Exclusion.**—Beck maintains that side-tracking a portion of the bowel is the best method to obtain a palliative cure in an otherwise intractable intestinal fistula or inoperable tumor and may be employed with perfect safety to the patient. He says he speaks with some authority since he had the rare opportunity of performing 8 laparotomies on one individual before he was cured of his intestinal fistula and he gives the case in detail. He also gives other cases illustrating his views and concludes that total exclusion of a portion of the bowel offers excellent means in curing otherwise intractable conditions.

65.—See abstract in THE JOURNAL of October 5, p. 929.

66.—Ibid.

67.—Ibid.

68.—Ibid.

70.—Ibid.

71.—Ibid.

72.—Ibid.

73. **Pancreas in Diabetes.**—After first reviewing the literature as regards the specific changes in the Islands of Langerhans in diabetes in the papers of Scobolew, Opie, Weichselbaum and Stangel, Herzog reports the results of his examinations of the pancreas in four cases of diabetes. In only one was the examination sufficiently thorough to warrant conclusions, but the result was well in accord with the observations of previous writers. In all four cases there was a certain

marked increase of connective tissue and thickening of the capsule of these bodies. In one case only a few of them were found with difficulty.

82. **Vaginal Section.**—After mentioning the methods adopted by Orthmann, Mackenrodt and others, Webster describes his own practice. He makes a circular incision of the cervix just below the attachment of the vaginal wall. This is joined by a mesial incision an inch and a half or more in length, dividing the anterior vaginal wall. The cervix being well pulled down, the wall of the vaginal vault is stripped upwards until the anterior peritoneal pouch is reached. The anterior wall is also stripped somewhat from the base of the bladder. The utero-vesical pouch is then opened. The advantages he claims for this method are that the uterus can be pulled down to a greater extent and that more room is obtained for intra-pelvic manipulations. The latter may be sometimes facilitated by a transverse incision through the pouch of Douglas. Occasionally with enlarged uterus or chronic metritis it is advisable to ligature one or both uterine arteries which are easily exposed in the raw surfaces made. When the enlarged uterus can not well be brought down its descent can be assisted if the base of one or both broad ligaments are divided internal to the ligatures. At the end of the operation the uterus is pushed into place and the peritoneum closed and the original vaginal incision closed with chromic catgut. He describes the adaption of this method to cervical amputation and anterior colpotomy.

87.—See abstract in THE JOURNAL, xxxvi, p. 756.

90.—Ibid., p. 908.

95. **Embolism of the Central Retinal Arteries.**—The cases reported by Würdemann were deep massaged according to Casey Wood's method and the fortunate results are believed by the writer to be mainly due to dislodgment of the blood clot by means of the renewed blood supply. Starvation of the nerve cells of the retina was absolutely complete in the first case and but partial in the second; the return of the visual function in the former complete and in the latter incomplete. He does not think the drug treatment given at the same time should be credited with the cure.

96. **Optic Atrophy.**—After first reporting his case, Barrett reviews the others in the literature and speculates as to the origin. He is inclined to believe from all the evidence that the explanation will be found in a combination of vascular factors, operating on a terminal arterial system, altered blood, disturbed nutrition of vessels, spasm, and possibly thrombosis of the artery or vein.

100. **Alaskan Diseases.**—Kelsey reports his medical observations in Alaska at St. Michael Island and Andraeofsky, respectively. He finds there occurring a severe form of cerebrospinal meningitis, but the chief scourge of the country is scurvy. Typhoid fever also occurs under proper conditions. Rheumatism is neuralgic in type; the inflammatory type is never seen excepting in the summer time. Pneumonia does not occur there during the cold weather; when it does occur in the spring and summer in the damp and warm weather it is more or less afebrile in type. Neuralgias are frequent like other nervous diseases such as neuritis, spastic paraplegias, etc. Alcoholism is frequent. Insanity is often seen. Gastro-intestinal complaints, especially gastritis, constipation, intestinal indigestion and diarrhea due to improper food are mentioned. Among the natives cerebrospinal meningitis and scurvy do not occur, but chronic bronchitis, consumption, pneumonia in the rainy season, smallpox, measles, syphilis, la grippe, etc., are especially severe.

101. **Cardiac Inhibition.**—Curtin reports a case presenting certain peculiar phenomena, especially the murmur which he considers is congenital. Its point of occurrence was neither on the aortic or mitral area and the blood did not pass through the tricuspid orifice with sufficient force to produce murmur. The circulation was at no time impaired and no preceding disease likely to cause endocardial trouble appeared to have existed.

113. **Descemetitis.**—The existence of descemetitis as a special condition is combated by Bruns, who reviews the literature and reports cases. His conclusions are: 1. That there can not be any such disease as serous iritis; it is equally impossible to conceive of a serous cyclitis or choroiditis. "Simple" cyclitis would seem to be a term of evasion. 2. Descemetitis, on which the diagnosis of serous iritis was long made to rest, is a symptom sometimes appearing as an accompaniment of a focus of acute inflammation in the iris, ciliary body, or choroid. 3. It may also appear in cases of uveal disease so slight and evanescent that we are unable to determine the location of the focus, and here the term incipient uveitis more correctly indicates the diagnosis. 4. Descemetitis appears also in certain cases of subacute or chronic uveitis, where the focus can not be determined, but an inability to find it does not justify the diagnosis of simple subacute or chronic cyclitis. 5. Further observation will probably show it to be frequently the principal symptom of an acute plastic choroiditis which has been overlooked because too few cases of iritis or cyclitis are subjected to careful ophthalmoscopic examination after recovery and the complete disappearance of the vitreous opacities. 6. Many cases not to be clinically distinguished from such acute plastic choroiditis show to the ophthalmoscope after clearing of the vitreous no evidence of lesion in the choroid. In this it is reasonable to suppose that the choroidal focus was so peripheral as to be out of the field of observation. 7. Plastic choroiditis often appears under the clinical picture of the so-called serous iritis, but such cases usually are observed after a stage of circumcorneal injection and descemetitis has passed away.

114. **Lachrymal Endothelioma.**—The new growths of the lachrymal glands are discussed with special reference to the occurrence of endothelioma, by Warthin, who sums up his conclusions in the following: "1. The great majority of the lachrymal tumors described in literature under widely differing heads are most probably mixed tumors of endothelial origin similar in structure to those of the parotid and submaxillary glands. These tumors form a type peculiar to the serous glands and differ from the endotheliomata found in other parts of the body in their tendency to form cartilage, hyaline, and myxomatous tissue, and in their relatively slight malignancy. 2. Histogenetically they arise from the flattened endothelium of the lymph-spaces, and hence are called endotheliomata, but their peculiar characteristics warrant the employment of some special designation. The use of the term endotheliomata in itself appears somewhat misleading in view of the fact that endotheliomata elsewhere are of the nature of sarcoma and are for the greater part very malignant. These growths partake more of the nature of mature connective-tissue tumors. The designations, myxochondroma endotheliale, chondroma endotheliale, etc., might be employed as the case warranted to indicate both histogenesis and structural characteristics of the growth in the absence of any specific term for the cells lining the tissue-spaces or the tumors derived from them."

115. **Anisometropia.**—From the cases here presented Duane offers the following conclusions: "1. In the large majority of cases of anisometropia, even those in which the difference in refraction exceeds 2 D., the full correction can be applied with success, provided the patient is warned that it may take him one or two weeks to get accustomed to the glasses, and that during this period he must use them steadily. 2. In many instances temporary discomfort is produced by the glasses, but in the majority of such cases the discomfort soon disappears, if the glasses are steadily worn. The period of time that it takes a patient to get used to the glasses so that they no longer give discomfort, varies from a few hours to one or, it may be, two weeks. 3. After the patient has become accustomed to the glasses, they are not only worn with ease and satisfaction, but also often relieve important symptoms, which glasses not compensating the anisometropia do not relieve. 4. It is especially important to apply the correction when there is a beginning squint, which is evidently due to the anisometropia. Yet it is in these very cases that

we may expect difficulty in the acceptance of the glasses. 5. The causes of temporary or permanent discomfort in using glasses are: (*a*) either the strength of the glasses per se; (*b*) the unequal prismatic action of the unequally strong glasses; this gives rise either to diplopia and confused sight, or to muscular asthenopia due to efforts made in overcoming the prism; (*c*) the presence of a muscular deviation producing diplopia. The glasses in this case, by enhancing the distinctness of the double images, force them more upon the patient's attention, so that they are more difficult to ignore, and hence give more trouble than when seen without the glasses. This I believe to be one of the most frequent causes of a permanent difficulty in using the glasses. 6. The statement that glasses correcting the anisometropia cause trouble by producing retinal images that are of a different size in the right eye and in the left is probably fallacious, trouble not being caused in this way. 7. In anisometropia there is a moderate tendency for the right eye to be the more refractive of the two. In my cases, the right eye was the more refractive in 58 per cent. and, counting only the cases of high anisometropia, was the more refractive in 64 per cent. 8. In anisometropia the proportion of cases in which the right eye is the more ametropic about equals those in which the left eye is the more ametropic. 9. Anisometropia is very frequently conjoined with muscular anomalies, and particularly (in 41 per cent. of my cases) with divergence (exophoria or divergent squint). The divergence may be due either to a convergence insufficiency, or to a divergence excess, the latter condition being comparatively common. In the cases that I examined, convergent deviations were less than half as frequent as the divergent. 10. In anisometropia of low degree there is no special tendency to the development of hyperphoria. In high anisometropia hyperphoria is unduly frequent (occurring twice as often as in low anisometropia). 11. The proportion of cases with squint (especially divergent squint) is high, convergent squint being found in 11 per cent., and divergent squint in 14 per cent. of my cases."

116. **Torticollis.**—Dallwig reports two cases of torticollis dependent upon a vertical deviation of one eye and the attempt of the patient to overcome the visual disturbance by holding the head obliquely. In neither of his cases did he operate, but in one the ocular condition and the lateral separation of images have decreased and the obliquity with which the head is held has diminished.

119. See abstract in THE JOURNAL of September 28, p. 852.

132. **The Framework of the Human Spleen.**—The summary of Kyes' conclusions is as follows: "1. Within the lobule of the human spleen there is a delicate network of fibrils continuous throughout the pulp cords and the Malpighian follicles. 2. The fibrils of this entire network are reticulum in the sense of Mall. 3. The fibrils encircling the capillary veins are an integral part of this reticulum network and are not elastic tissue. 4. The so-called specific elastic tissue stains yield a positive reaction with reticulum as well as with elastic fibers."

134. **Hemolymph Glands.**—Warthin describes the hemolymph glands in the human subject, comparing them with those found in certain of the lower animals. He thinks that a study of these broadens our conception of the lymphoid tissue, and he gives a comparative table of the lymph organisms. In regard to the relations between the blood and lymphatic systems the red marrow might be considered the most primitive type of lymphoid structure, and the ordinary lymphatic glands the most developed, the hemolymph glands and spleen occupying intermediate positions.

139. **Retained Testicle.**—This condition is apparently, in Bartlett's opinion, most probably due to a mal-development of the organ. In the three cases reported there was more or less absolute or relative connective tissue increase besides mal-development of the glandular element. The disadvantages to the individual are serious as these organs in their abnormal condition are liable to be the seat of tumor formations and frequently malignant disease. If treated sufficiently before complete maturity an effort must be made to bring down one gland at least, as has been done by Casati and Boyer and others, or spontaneous descent must be favored by a proper transposition of the tissues as Sargi and Trombetta have proposed. If nothing is done until after maturity removal of the organ will do no harm.

141. **Right-Sided Anatomical Tripod.**—This comprises the common symptoms of gallstone, kidney stone and appendicitis, and Thomas points out the chief distinctions, calling particular attention to the following: 1. Relative to the three distinct locations in which the pain begins. 2. That except a reactionary temperature be observed, no elevation is expected at the beginning of the attack except in appendicitis. 3. The tenderness on pressure corresponding with the different locations of the trouble. 4. The different character of vomit. Most of the other symptoms outlined are sufficiently characteristic and not found in all the conditions discussed.

143. **Modern Surgery.**—The requirements of modern surgery, according to Carstens, are: "1. A patient brought to the highest state of resistance to microbic infection and made as clean as possible. 2. An operating room, preferably in a hospital, where everything has been made thoroughly sterile. This includes anesthetizer, assistants and nurse. 3. A surgeon who has a mechanical hand and has received a thorough and long training."

147. **Asthenopia.**—Tennent goes over rather briefly the general conditions of asthenopia, convalescence, and weakness, and offers the following conclusions: "1. General disease is the aggravating cause in a large proportion of asthenopic cases. 2. Grave diseases, notably typhoid and tuberculosis, give rise to retinal exhaustion and other severe symptoms. 3. Retinal exhaustion is usually found with other neurasthenic symptoms and improves under patient treatment."

FOREIGN.

British Medical Journal, November 30.

A Case of Syphilitic Arterial Disease. WILLIAM R. GOWERS.—Gowers reports a case in a woman aged 25, who had suffered from headache, mental distress, vomiting, loss of power on right side and had had some kind of fit. It was thought she had had syphilis; she was ill-nourished and anemic and unable to account for herself. There was considerable right hemiplegia, weakness of the right side of the face, complete paralysis of the upper arm, but she could move the forearm and hand a little; power of the leg was limited to slight movement of the foot. There was also foot-clonus and impaired sensation; the left side was normal; the discs were also normal. Mercurial inunctions were ordered, followed by some improvement, which soon ceased and potassium iodid treatment was begun, 15 grains per day. She died on the 26th day after admission with sudden paralysis of the left side, having gradually failed most of the period. The postmortem examination revealed a syphilitic arteritis, most intense at the commencement of each middle cerebral artery where the passage of the anterior cerebral from the inner carotid converts the latter into the middle cerebral, diseased growths having entirely surrounded the vessel. In each middle cerebral the disease was continued for about one-half to three-quarters of an inch and spots of disease beyond. The left anterior cerebral was smaller than the other and pale, and the right middle cerebral was occupied by a recent clot, extending from its origin throughout the vessel. This must have been the cause of the final hemiplegia. The left middle cerebral was completely closed and contained an old clot occupying the vessel for about a third of an inch. Beyond this thrombus the artery contained fluid blood. The circulation had been maintained in the distal portion by aberrant arteries from the posterior cerebral joining the middle cerebral just before its division, which had prevented the extension of the clot. Another abnormal vessel, a duplicate communicating one of the circle of Willis, kept up the circulation in the anterior cerebral. The occurrence of the limited clot in the left middle cerebral must have caused the onset of hemiplegia. The clot in the anterior cerebral may be assumed

to have caused the onset of the mental symptoms. The cause of the progressive increase of symptoms was the change in the brain substance due to endarteritis of the terminal arterioles showing increasing effect of the diminished blood supply. The severe persistent headache was the result of morbid processes in the vessels which made the symptoms otherwise also simulate those of tumor. Death in this case was inevitable, but the diagnosis of the actual condition during life was impossible. Gowers thinks that while we can not repair the vessels damaged in the way they were, we should give iodids, but not in such large doses as are sometimes given, as it is possible that there may be some truth in the theory that iodids favor the coagulation of the blood. The dose given the patient, 15 grains three times a day, was ample to influence such disease and as much as is wise to give, and the possibility of getting accustomed to the drug should be considered. It is possible that morbid processes might be such as to acclimate the patient to iodids in spite of them. He insists on care that is necessary and desirable in giving the prognosis of cases of such disease of the cerebral arteries and the value of the scientific imagination in many such diagnoses.

Some Cases Illustrating the Necessity for Accurate Observation in the Management of Surgical Cases. WILLIAM H. BENNETT.—The unreliability of pathogenic symptoms is the motive of Bennett's article. We should dismiss from our minds the possibility of single symptoms being evidence of any disease. He illustrates this fact by several cases: one diagnosed strangulated hernia which turned out to be a case of very early extrauterine pregnancy, one of perimetritis which had been operated on for hernial tumor which was not the cause of the trouble. Two other cases are reported showing the danger of depending too much on any one symptom: one of strangulated hernia which gave free impulse on coughing, and another of abdominal contusion with absence of liver dulness due entirely to the wearing of a tight strap or belt, the patient being a laborer. Attention to details in surgical diseases is especially emphasized and the constant appeal to exploratory operations deprecated.

The Lancet, November 30.

The Symptoms and Treatment of Movable Kidney. HENRY MORRIS.—The author first defines movable kidney, describing the varieties, giving those in which it can be readily found and those in which the kidney moves in a "cinder-sifting" manner behind the peritoneum, where the organ slides, so to speak, upon the plane of the posterior parietes, never "dropping" forwards or inwards, and so not properly described by the term nephroptosis. It also sometimes rotates more or less around the vertical and transverse axes. The reasons why opinions as to the frequency of this condition vary, are given by him as due to superficial examinations, the different ideas of movable kidney, some claiming that it is abnormally mobile whenever it is at all felt by palpation during deep inspiration and the fact that physicians at health resorts whose patients are mostly dyspeptic and who systematically employ methods of palpation undoubtedly find larger numbers than those that only treat patients under ordinary conditions. He describes his method of detecting movable kidney, the patient being in the recumbent position, by bimanual palpation and also describes Glenard's and Israel's methods. The symptoms are described; they may be negative, but they also may be serious in certain cases. The most common effect of movable kidney is general impairment of health, with languor, debility, loss of flesh, vertigo, constipation, hypochondriasis, and various neurotic states. The most frequent effect on the kidney is hydronephrosis, either intermittent or persistent. As regards treatment he has little faith in trusses or bandages; while they may keep the kidney in place they do not fix it in its proper place and require to be continuously worn, often to great discomfort. He attaches no value to rest in the recumbent position. His conclusions as to treatment are as follows: "1. When movable kidney is associated with enteroptosis, no operation should be performed on the kidney unless it is evident that the more serious symptoms are due to the movable kidney alone, and not until after the trial of a well-fitting abdominal support and the careful dietetic and medicinal treatment of the gastric and intestinal disorders. Should these means fail and the kidney be evidently most at fault, nephropexy, followed by the wearing of an abdominal belt, should be tried. 2. When a movable kidney is complicated by a movable liver, or when both kidneys move, the same rule should be followed as in general enteroptosis; in the case of both kidneys moving (when both organs have been giving trouble) they should be fixed one after the other at an interval of a week, so that convalescence from both operations may be taking place simultaneously. I have in several instances thus operated on both organs with the most satisfactory results. 3. When the movable kidney occurs in a hysteric or neurasthenic patient, all palliative means should be tried before resorting to an operation, and the patient's friends should be informed of the uncertainty of the result from the operation. The statistics show that a cure may be hoped for by nephropexy in about half of these cases. 4. For uncomplicated movable or floating kidney, in which the principal symptoms are pain and gastro-intestinal troubles, the operation may be confidently advised and carried out without any previous trial of belts or of rest. 5. When renal crises are a feature of the case, nephropexy ought to be strongly urged because of the impossibility of keeping the kidney in its proper place by a belt, and because of the constant risk of hydronephrosis and recurring pain, even if the renal crises can be kept under control. 6. When a movable kidney gives rise to no inconvenience an operation ought not to be thought of and a belt need not be worn.

Twenty-Five Years' Experience of Urinary Surgery in England. G. BUCKSTON BROWNE.—In his third lecture Browne deals with the subject of stricture. The management of this condition has made great advances and the class he here specially considers is that which can not be readily kept open by the easy and periodical introduction of the bougie. There is constant danger in this condition and he even goes farther than Syme, claiming that there is no case where the instrument can not be passed. The treatment which he believes has come to stay in these cases is internal urethrotomy in all strictures which do not yield to dilatation. Puncture of the bladder in cases of retention is justifiable in naval, military and country practice, but hospital surgeons do not have to be reduced to this necessity. In difficult stricture he maintains that filiform bougies are really dangerous, may break in the bladder and give trouble. He has no confidence in any instruments in these cases except the steel ones. The surgeon in any case should take a convenient time and be deliberate. The instruments required are steel sounds, varying from the No. 2 to No. 17. He uses the No. 7 to No. 16, a little smaller at the point than in the shaft, some blunt-ended English gum bougies from No. 3 to No. 10, a foot rule marked by inches and a No. 11 or No. 12 soft gum catheter, mounted on a stylet for tying in at the close of the operation. The patient is carefully prepared; the limbs are not exposed, but protected against the cold; when the patient is completely anesthetized, the blunt-ended soft bougie is introduced and the exact distance of the stricture carefully ascertained. Then a steel sound well warmed in vaselin should be passed, with the finger in the rectum used to guide it in the middle line. No force must be used, but a steady search made for the orifice of the stricture, and firm but steady pressure be applied when it is found. When the sound is fairly grasped no attempt should be made to pass the instrument, which is one of the smallest, unless it goes forward easily, but it should be withdrawn and the next largest applied and so on. Whence once the No. 6 or No. 7 sound has been fairly passed into the bladder, the surgeon stands on the patient's right side, draws out the sound and slips in the urethrotome. When the bulb is fairly in the bladder the experienced surgeon feels a sensation of looseness and freedom quite characteristic; to be sure that everything is right, when it is in a proper position the instrument is carefully withdrawn until the bulb is one inch from where the stricture is known to begin.

The anesthetist is warned that the patient must be kept perfectly still; the blade is then protruded and a free incision made from behind forwards for a good inch along the floor of the urethra and about half an inch deep. The blade is then sheathed and the instrument withdrawn. A full-sized sound is then passed, No. 12 or No. 13; if it goes in easily, a larger one is also used. Then the soft catheter, mounted on a stylet curved so as to exactly correspond with the curve of the sound, is passed in and the stylet removed, and the catheter is tied in. The urine escaping will show that all is right and if there is any doubt it should be withdrawn and again passed in. On no account should any water be injected through it until there is no doubt that it is fairly in the bladder. When the catheter is tied in, the operation is through. He always tries to have the patient bear with the catheter at least two days. The patient sits up about the eighth day and with the periodic passage of two or three well-warmed and well-oiled steel sounds, the largest usually No. 14 (English), the case is finished. The patient can learn to use these himself. He has had experience with the operation for twenty-seven years and never lost a patient from it. The avoidance of primary manipulation is important and the operation is an excellent one even in many cases where there is no real difficulty in traversing the stricture with instruments, for example, where time is an object, when the stricture is at the urethral orifice or in the penile urethra and in cases where the gentlest interference is followed by rigor and prostration. It is also required where the stricture rapidly recontracts, when the deposit around it is large and dense and when calculus is impacted beyond it, or there is any urethral fistula behind it, and in cases of prostatic hypertrophy where the catheter has to be employed. Although he delays incising the perineum there are four conditions where this is to be advised: 1. Where there is urinary extravasation. 2. Where there is pus requiring an exit. 3. In some cases of prostatic calculi. 4. In some rare cases of urethral calculus. In all cases of periprostatic abscess and of perineal abscess, a free perineal incision must be made at once. He thinks that if the surgeon is prompt in dividing the urethral stricture a true perineal abscess never will communicate with the urethra and the patient will be saved all the trouble of urinary fistula. He does not favor opening the urethra from the outside. It is very difficult sometimes to heal up the incision, and a urethro-perineal fistula is a bad thing. He would consider opening of the urethra in vesical calculus, urethral stricture, perineal abscess and extravasation in peritoneal tissue, or vesical exploration or drainage, as a surgical mistake.

Alkaptonuria. ARCHIBALD E. GARROD.—According to Garrod this urinary abnormality seems to have some connection with consanguinity of parents, and he brings forward certain facts showing the frequency of its occurrence in children of first cousins. This supports the view that alkaptonuria is what may be described as a "freak" of metabolism, a chemical abnormality more or less analogous to structural malformations. There is no evidence of heredity, for there has never been any case of it observed as occurring in two generations. He is able to furnish facts as to the exact appearance of its onset in congenital cases, having had a patient under observation where it occurred the day after birth. He gives observations and tables bearing on the question as to the relation and time of output of homogentisic acid to a proteid meal, which did not bear out Mittelbach's observation of the reducing power of urine showing the maximum excretion two or three hours after the proteid meal, but showed that although such meal is quickly followed by a much increased excretion of homogentisic acid a still larger amount is excreted during the second period of four hours than during the four hours immediately following the meal. In other words, they tend to support the view that the change from tyrosin to homogentisic acid takes place in the tissues after the absorption of the former, rather than the alternative view that the change in question is brought about in the alimentary canal.

"Myxasthenia," With Remarks on Kindred Affections. WALKER OVEREND.—Overend suggests the term myxasthenia for a condition of special dryness and irritability of the mucous membrane. He discusses the condition showing the pathologic states with which it seems to occur, such as certain gastric and bowel troubles, bronchitis, etc., and its relation to gouty and diabetic diatheses.

Annales des Mal. Gen. Urin. (Paris), October.

Successful Perineal Prostatectomy. DEFFIS.—Macias and Gonzalez of Mexico have been treating hypertrophied prostate by perineal prostatectomy for the last ten years. Their experience now includes thirty cases. They incise the raphe of the perineum for 4 or 5 cm. and cut a buttonhole in the urethra, through which they insert an Otis urethrotome into the bladder, withdrawing it open, to dilate the urethra. The lobes of the prostate are then detached in turn with the fingers and taken out with forceps. There is very little hemorrhage. A large, flexible sound is next inserted in the bladder which is rinsed with a 1 to 1000 solution of silver nitrate. The cavity left after the removal of the prostate is packed with iodoform gauze. The permanent sound is changed the second day but is not removed for eight to fifteen days. It is then introduced through the urethra or used intermittently. The bladder is left in complete repose owing to the extensive drainage through the perineum. One patient died from an intercurrent disease and one soon after the operation from progressive debility. The others are all in the best of health so far as the urinary apparatus is concerned. As the prostate is removed from beneath the capsule—from within outward—the operation is simple and causes only slight trauma. The large vessels are all outside the capsule. A portion of the prostate is left above, which keeps the upper wall of the urethra intact, and obviates the danger of a stricture later. There has been no incontinence of urine in any case.

Hematuria of Pregnancy. U. CHIAVENTONE.—Toxemia from insufficiency of liver and kidneys is probably the essential cause of the hematuria which appears in pregnancy, with no hereditary nor personal antecedents, and terminates with the pregnancy. Congestion may be an associated factor. Ordinary measures are ineffectual against this form of hematuria. Only seven such cases are on record and Chiaventone adds an eighth. If the severity of the hematuria requires active intervention, the bag of waters might be punctured to relieve the compression on the ureters and vessels. Premature delivery might be required in certain cases.

Bulletin de l'Academie de Med. de Belgique (Brussels), July 27.

Vascular Lesions in General Paralysis. A. MAHAIN.—An infiltration of the sheaths of the smaller vessels of the cortical layer of the frontal lobe was noted constantly in seventeen cases of progressive paralysis, while it was never found in twenty-two cases of other mental affections with the exception of cerebral syphilis. In the latter no difference could be detected even with the microscope between these lesions in progressive paralysis and in cerebral syphilis.

Revue Gen. d'Ophthalmologie (Paris), October 31.

Dangers From Ligature of the Carotids. SIEGRIST.—Analyzing the 997 cases of ligature of the carotids which Siegrist was able to collect in the literature of the last century, he found that the mortality was 40 to 44 per cent. and that the operation was followed by disturbances in the eye of the same side, in 4.2 per cent. He is convinced, however, that the visual troubles were due to complications of the operation and that the mere interruption of the circulation in the territory of the carotids does not endanger the eye. He has had occasion personally to observe two cases of blindness in the eye on the same side after ligature of a carotid. In the first the internal carotid was ligated during an operation for the removal of a cancer of the base of the tongue. Hemorrhage occurring eight days later rendered it necessary to throw a ligature around the common and the internal carotid. The patient exhibited slight cerebral symptoms the same evening and the next day he found that the eye on that side was blind,

with signs of embolism of the central artery of the retina. The patient died a week later from paralysis of the heart. The autopsy disclosed embolism of the central artery of the retina from the debris of a thrombus which had formed in the external carotid, ligated eight days before. This debris had become detached at the time the common carotid was ligated, and had been swept into the trunk of the arteria centralis retinæ. In the second case, the diagnosis could not be verified by the autopsy, but the facts observed after ligature of the internal and external carotids, undertaken for the purpose of curing a pulsatile exophthalmos, also indicated thrombosis of the arteria centralis retinæ. The mortality in 172 cases collected between 1881 and 1897, was only 20.3 per cent. This number includes 113 cases of ligature of the carotid as a curative measure for pulsatile exophthalmos, with 10 deaths. Excluding the patients who died in consequence of post-operative infection, the figures show 5 deaths attributable to the ligature in 108 operations, that is, a mortality of 4.6 per cent. Siegrist concludes from his comparative study of the data that the age of the patient has no influence on the prognosis, up to 60 or even 70 years, unless he is debilitated from some cause. The prognosis is less favorable at any age when the general condition is poor as in case of malignant tumors, or considerable hemorrhage or vascular lesions, aneurysms, etc. Certain circumstances, such as some cardiac defect or the accidental inclusion of the pneumogastric or sympathetic in the ligature, render ligature of the carotid extremely dangerous in young or old subjects. Before attempting to ligate the artery the heart should be accustomed to the change in the circulation by systematic compression of the artery for some time beforehand, which will also aid in developing a collateral circulation. Infection of the wound may entail septic crumbling of the thrombus with possibly septic, metastatic softening of the brain, cerebral abscess, panophthalmitis and meningitis, not to mention the threatening secondary hemorrhages at the point of the ligature. The artery should be ligated under local anesthesia in order not to interfere with the strength of the heart-action by chloroform anesthesia, as the success of the operation depends on the co-operation of the heart. The operation is contra-indicated, unless under exceptionally urgent conditions, in case of heart disease, valvular defect, anemia or cachexia, especially if the patient is over 40. Digitalis should be administered in such cases before or, at least, immediately after the intervention. In case of post-operative dangerous symptoms, a heart tonic should be given and the heart relieved by venesection, to which the surgeons of old attributed their success in averting the dangers of ligature of the carotid. Full details of Siegrist's cases have been published in *Graefe's Archiv*, L, p. 511.

Beitraege z. Klin. Chirurgie (Tuebingen), August.

Neurofibromatosis. C. ADRIAN.—The progressive character of neurofibromata distinguishes them from nevi which in other respects they resemble. Neurofibromatosis evidently develops on a congenital foundation and is thus a malformation in the widest sense of the word. It is congenital or develops in youth, and its hereditary character is evident. Among the twelve cases described, three occurred in five children in two inter-related families. It is generally benign, but has a tendency to malignancy.

A Cystadenoma of the Thyroid Gland. F. SMOLER.—The peculiarity of the case described was that it was successfully operated again and again and was under observation for twenty-seven years. No recurrence has been noted since the papillary cystadenoma was partially removed for the third time. In the 5 similar cases on record, the survival was only three to five years. No metastasis of this kind of tumor has ever been known. The case described is the only one that perforated through the skin.

Osteoma of the Nasal Cavities. E. HAAS.—Among the symptoms of an osteoma of the nasal cavities are itching, hemorrhage, ozena and complications in the lachrymal passages. One case of spontaneous expulsion of the osteoma has been observed. It had induced suppuration and necrosis in the adjacent tissues. Haas has witnessed one case and has been able to find twenty in the literature.

Prostatopexy for Hypertrophied Prostate. E. GOLDMANN.—An enlarged prostate offering a mechanical obstacle to the flow of urine, is best treated by fastening the bladder to the anterior abdominal wall. The abdomen is incised on the median line, and the anterior wall of the bladder, where it is free from peritoneum, is sutured as high as possible to the abdominal wall. By this means the orifice of the urethra is made to gape without danger of infection. The autopsy of a patient who had been treated in this way but died from progressive myocarditis, demonstrated that the operation had been a perfect success in every way.

Circular Resection of Rectal Strictures. M. REBER.—Two cases of inaccessible stricture of the upper third of the rectum were extirpated after removal of the coccyx and a portion of the sacrum, and a longitudinal incision in the posterior wall of the rectum. The stricture was then removed without opening the peritoneum, and the edges of the longitudinal incision were sutured together horizontally in order to widen the lumen of the intestine.

Berliner Klin. Wochenschrift, November 4.

Improved Colpoceliotomy. A. DUEHRSSEN.—Entering the abdominal cavity through the anterior wall of the vagina is the route long advocated by Duehrssen, who claims that it affords such ample access that the internal genitalia can be photographed with ease. It is possible, by incising the vesico-uterine pouch as extensively as possible, to ablate by this route an ovarian tumor completely filling the abdominal cavity and not projecting into the small pelvis. The tumor can be opened and the contents evacuated, after which the empty shell can easily be drawn down and extirpated. He describes a typical case of this kind, the patient a frail woman of 63, the tumor three times as large as a man's head. She was dismissed cured in two weeks and a week later took a long journey. In order to facilitate still more this vaginal operation, he has lately modified his technique to include the severing of the broad ligament, and the remarkably satisfactory results attained in the ten cases in which he has applied it, have convinced him that by this means it is possible to enter the abdominal cavity with the maximum operating space and the minimum of disturbance. By severing the broad ligament and detaching the uterus from the vagina it is possible to draw the uterus out through the vagina, where it can be inspected at ease without disturbing the appendages or its attachments on the other side. The cut shows the uterus drawn out and laid over on the vulva on one side, while the diseased appendages are drawn out in the same way. The stumps left after the ablation are fastened outside of the peritoneum before being replaced. The cicatrix left after this operation is trifling. The patients recuperate rapidly. The facilities for arresting hemorrhage are far superior to other methods. It would be possible to suture a rupture in the uterus, even in advanced pregnancy, by this method. The adhesions are exclusively seroserous and stretch readily, not interfering with pregnancy later. If the genitalia are found too much altered to be retained, the radical extirpation is already half accomplished.

Treatment of Gonorrhea. PROWE.—The principles on which Prowe treats gonorrhea were established by observation that infection occurred almost exclusively from women with copious and irritating discharges. He considers their suppression much more important in respect to contagion than the presence or absence of gonococci. He first curettes, then applies aluminum acetate to the cervical canal and in case of proctitis, injects a 2 to 10 per cent. solution of ichthyol. He swabs the urethra with a 2 to 10 per cent. solution of silver nitrate on a cotton-tipped probe. He has been exceptionally successful in preventing contagion by this method of treatment.

Centralblatt f. Bakteriologie (Jena), October 23.

New Hypothesis of Biochemical Antagonism. R. EMMERICH and O. LOEW.—As a possible explanation of the mechanism of the biologic serum test of specific albumins,

serums, etc., Emmerich and Loew suggest that possibly certain racemic, that is, optically inactive substances, are split into two optic antipodes during the process. For instance, if a levulo-rotatory albumin is used for the injections, it becomes transformed in the organism into a dextro-rotatory, and the precipitation is the result of the formation of a racemic albumin by the combination of the two antipodes. The combination of a dextro- and a levulo-rotatory calcium tartrate causes a precipitate to be thrown down. This phenomenon is naturally more pronounced with the large molecules of the proteins than with the comparatively small molecules hitherto studied in this connection.

Agglutination in Various Infections. S. J. GOLDBERG.—The most interesting point in the extensive experimental researches reported is that an increase in the agglutinating properties of the blood should be regarded as an early sign of the successful auto-defence of the organism.

Centralblatt f. Kinderheilkunde (Leipsic), June and July.

Acute Mummifying Cutaneous Gangrene. C. HOCHSINGER.—A large patch of gangrene, which resembled a rubber dress-shield in size and location, developed under the arm of a healthy babe about a week old. The child died the fourteenth day. Only two similar cases are on record. One was published by Stoffregen of St. Louis. No postmortem was allowed in this case, but it is possible that a thrombus might have existed in the long thoracic artery. The axillary artery was intact and the radial pulse was perceptible.

Pemphigus in the Newborn. C. HOCHSINGER.—When pemphigus develops on a reddened skin in the newborn it has proved malignant, in Hochsinger's experience, while it runs a mild course if it develops on apparently normal skin. He describes one case of each kind. The lack of scab formation differentiates the genuine, infantile contagious pemphigus from contagious impetigo which it otherwise resembles. The latter has also been observed in newborn infants. The babe with malignant pemphigus died in eleven days. The mother contracted the pemphigus in each case.

Multiple Cavernous Angiomatosis. C. HOCHSINGER.—Only six cases of this affection have been described in the literature according to Hochsinger, and none even remotely approximated the personal case he reports. The child was a vigorous three weeks' babe. When first seen the upper layers of the cutis contained forty to fifty round or oval venous blood sacs, the size of a lentil seed. Eighty could be counted by the end of the third month, but all spontaneously vanished before the child was a year old.

Deutsche Archiv f. Klin. Med. (Leipsic), lxxi, 1 to 3.

Pavlov's Experiences with Dogs Repeated on Man. SCHUELE.—Pavlov found that dogs secreted gastric juice at the mere sight of appetizing food. Schuele has been repeating his tests on the human subject, siphoning out the stomach contents at various times during the day. He found that this psychic secretion of gastric juice, Pavlov's "appetit saft," does not occur in man. Human beings are trained from childhood to repress greediness, and Schuele found it impossible to induce this psychic secretion at the sight of tempting food. He found on the other hand that the glands in the stomach are stimulated to secretion by reflex action from the food in the mouth, by the purely chemical action of certain substances, by their agreeable taste and lastly, by the action of mastication alone, even when articles were masticated which were not swallowed. His tests also demonstrated that it was impossible to elicit the secretion of gastric juice by mechanical irritation of the stomach walls with the sound or other instrument, similar to Pavlov's experiences with dogs.

Deutsche Med. Wochenschrift (Leipsic), November 28.

Agglutination of Tubercle Bacilli as a New Standard for Treating Tuberculosis. R. KOCH.—Efforts to protect man, to immunize him against tuberculosis have been conducted for years, Koch remarks, but they were rendered peculiarly difficult by the lack of a standard to determine what had been accomplished in the line of immunization. He has now simplified the agglutinating test for the tubercle bacilli and announces that it is possible to apply this test as a standard to estimate the actual progress accomplished in immunization. All the former uncertainty has been banished at one stroke, he states. He first established on animals the technique for the administration of the bacilli to obtain the agglutinating reaction as rapidly and intensely as possible. He then applied the results to man, and now reports 74 patients treated according to these principles, with more or less success in all but 9 cases. Four of these were evidently old, healed lesions and the others did not complete the course of treatment. He assumes that the protecting substances in the organism increase parallel with the agglutinating reaction, as pronounced clinical improvement invariably accompanies it. The appetite returned, the patients gained in weight, the night-sweats usually vanished and the expectoration decreased. Most of the patients were in the second or third stage of the disease. The agglutinating reaction was more readily induced in the early stages of the disease and could more easily be kept at a high point. In 14 patients the agglutinating power was brought to 1 to 25; 1 to 50 in 28; 1 to 150 in 6; and 1 to 200, 250 or 300 in 3 patients. Tests on 30 persons without, and 78 with tuberculosis showed that the agglutinating reaction occurred spontaneously in a number of subjects in each group, showing that it has no value for early diagnosis of the disease. Patients in the advanced stages do not exhibit the agglutinating reaction, which confirms Koch's assumption that it is directly connected with the presence of the protective substance in the organism. We know that tuberculosis is not a disease that confers future immunity like smallpox, etc., from the accumulation of the protective substance. There is not enough of the protective substance elaborated in the course of tuberculosis to induce a spontaneous cure and subsequent immunity. But Koch is convinced that this immunization can be artificially accomplished by repeated subcutaneous injections of small amounts of tubercle bacilli dust, controlling the effects on the organism by the agglutinating property acquired by the serum. One part of finely pulverized tubercle bacilli is mixed with 100 parts water and 100 parts glycerin. After standing a few days the fluid is poured off the sediment. One c.c. represents 5 mg. of the pulverized bacilli. It is diluted with .8 per cent. salt solution. A reaction is seldom observed after a first injection of 2.5 mg. The dose is then rapidly increased, repeating the injections every one or two days until a pronounced reaction is obtained, raising the temperature two or three degrees. After such a reaction the injections are suspended for six or eight days, and repeated again as needed to keep the agglutinating power at about the same high point. He injected as much as 20 to 30 mg. in several cases. This is the limit, as larger amounts are not absorbed. After the dose reaches 10 to 20 mg. the intervals between injections average from two to four weeks. In some cases the agglutinating property diminished in spite of the large doses, but he kept it at the desired point by substituting intravenous for subcutaneous injections, reducing the dose. The effect of this method of immunizing patients is most striking in regard to the temperature. Non-febrile patients never exhibited fever after the reaction which could be ascribed to the injection, and in febrile subjects the temperature was favorably influenced by the reaction. At first the temperature dropped only transiently, from the third to the fourth day after the injection; it then remained low for a few days and then gradually began to rise again. If a vigorous reaction was then induced by an injection, the temperature dropped again and lower and more permanently than after the previous injections. By continuing the injections with their reactions it was possible to keep the temperature permanently reduced. In a few cases even high fever of a pronounced hectic type was completely banished by this means. Febrile conditions, therefore, do not contra-indicate this treatment, as in case of tuberculin. Koch excluded only patients with enfeebled heart-action or extreme debility or such extensive destruction of lung tissue that improvement was absolutely impossible. He applied the treatment indiscriminately to all others, and abandoned it only in the few cases in which the weight continued

to decrease, and no agglutinating reaction could be induced. He judges from his present experience that the patients require six months or more of this treatment. After large doses have been reached and the reactions have become less violent, the patients return at intervals of two to four weeks for an injection. They should be continued until the tubercle bacilli have entirely disappeared from the sputum. This immunizing method of treating tuberculosis does not conflict with other methods. He believes that its chief sphere of usefulness will be in the advanced cases, especially for application in sanitariums after other measures have failed. He prepares the bacilli for agglutination by grinding them to a powder with caustic soda in the proportion of 0.2 of the culture to 20 c.c. of the fluid. It is neutralized to a weakly alkaline reaction with diluted hydrochloric acid and diluted with 0.5 carbolic acid and 0.85 per cent. salt solution. The final proportion is 1 part of this preparation to 100 parts of the carbolized salt solution. It is then centrifugalized and diluted with the same fluid to 1 to 1000. It can then be kept on ice for two weeks ready for use.

Muenchener Med. Wochenschrift, November 19.

Influence of Alcoholic Enemata on the Gastric Secretions. R. SPIRO.—An hour after an evacuating rectal injection, 7 to 10 c.c. of alcohol in 200 c.c. of salt solution were injected. An hour later the contents of the stomach were siphoned out at half-hour intervals. This procedure was repeated every one or two days until five to eight tests had been made on the various subjects. The results demonstrated that this administration of alcohol or of a fluid containing 7 to 10 per cent. of alcohol, had a marked influence in promoting the secretion of gastric juice, the maximum occurring one hour after the enema. The tests were negative in two subjects with achylia and one with cancer of the stomach.

Practical Significance of Lactation Atrophy of the Uterus. W. THORN.—According to Thorn, the number of women unable to nurse their children is constantly increasing in Germany. It almost seems, he remarks, that Germany is taking its place beside France, at the head of the procession. Progressing civilization entails this inability to nurse, as exemplified in the history of India, Greece and Rome. Mothers unable to nurse their offspring are less resistant and suffer from various general and local disturbances. The physiologic process—lactation atrophy of the uterus—is interfered with. Under normal conditions, the body of the uterus becomes atrophied during lactation, and normally, is accompanied by amenorrhea, although ovulation continues. Complete regeneration follows after the weaning of the child, or at latest within six weeks. If the cervix or ovaries are involved in the atrophy or if it extend beyond, the amenorrheic nursing woman should be strengthened by abundant nourishment, and the nursing should be interrupted at intervals, to restore the atrophy to its physiologic limits. If this can not be accomplished, the child must be weaned. No woman, especially if amenorrheic, should nurse for more than a year, and eight months should be the average for moderately strong, amenorrheic women unless in special circumstances. No local treatment of the atrophy is necessary, not even for the frequently accompanying retrodisplacement. An acute intercurrent disease does not interfere with regeneration. If the atrophy persists for more than six weeks after weaning, local treatment should be instituted as a supplement to general tonic measures. During the period of atrophy the walls of the uterus are very soft and thin, and consequently no instruments should be inserted, or should be employed only with extreme caution. Women who menstruate more or less regularly during lactation do not present this atrophy of the uterus. The cavity of the uterus in the typical amenorrheic cases becomes reduced to 4.5 cm. and the walls to a few millimeters thick, but the cervix and the ovaries retain their normal size. Frommel has reported that regeneration did not occur in any of the 28 cases he observed, but his material was all gynecologic. All of Thorn's 25 patients returned to normal conditions at the normal time. They were healthy obstetric cases.

Importance of the Pulse in the Puerperium. O. AICHEL.—Every surgeon compares the pulse before and after an operation. Aichel proclaims that this should be done also in obstetric cases. The physician should record the patient's pulse at some time during the pregnancy. He will then have a base for comparison with the pulse during the puerperium, and he will find this comparison a most valuable means of determining the course of events, far more reliable than the temperature curve. In several cases he has found that the pulse remained rapid, although the temperature had returned to normal, and invariably some exacerbation or complication later explained the behavior of the pulse. In 5 per cent. of his cases, Aichel found a pulse of 100 during the pregnancy and consequently was not disturbed when the pulse remained at 100 during the puerperium. The pulse is slower when the subject reclines, and therefore the pulse during the puerperium may be expected to be a trifle slower than when taken during the pregnancy unless the subject is reclining.

Cyclic Albuminuria. P. EDEL.—The measures that have a favorable influence on albuminuria owe their efficacy, Edel believes, to the fact that they promote the circulation of the blood in the kidneys. The heart should be exercised and trained in cases of albuminuria and nephritis, as systematically as in case of cardiac affections. An energetic walk, in his experience, has always suspended the cyclic albuminuria, if stopped short of fatigue, while a dragging, lounging walk had no influence. Another important element in the treatment of cyclic albuminuria is the food. He ordered more nourishing food, at shorter intervals, with systematic exercise and the albuminuria vanished completely in eight weeks, after it had persisted for eight months unaffected by all kinds of treatment. This experience has been repeated in three patients, and he considers himself justified in proclaiming the importance of this method of treating cyclic albuminuria, evolved from study of the pulse of the patients. Whenever the pulse exhibited the influence of increased resistance to the circulation, albuminuria occurred, but when the pulse was normal, the urine was normal too. By measures to regulate the circulation, the pulse was restored permanently to normal and the albuminuria vanished at the same time.

Therapeutische Monatshefte (Berlin), November.

Internal Disinfection in Infectious Diseases. L. WEILL.—Inhalation of the steam from a boiling solution of sublimate, three times a day for four weeks, had a remarkably curative effect in a number of cases of acute tuberculosis. The temperature invariably fell, sometimes as much as two or three degrees, and catarrh of the apices, and glandular affections rapidly healed. Glands with connective tissue formation or in caseous degeneration were not affected. In cases of typhoid fever, the internal disinfection was accomplished by means of rectal injections of a pint of a 1 to 10,000 or 1 to 20,000 solution of sublimate, retained as long as possible. The effect on the temperature was equally pronounced. In a recent typhoid epidemic the cases thus treated were unmistakably shorter and less severe than others which received merely the usual treatment. Another advantage is that the stools are already disinfected before they are evacuated, thus reducing the danger of contagion.

Lecithin in Therapeutics. A. GILBERT.—Consumptives and neurasthenics thrived remarkably on pills containing 0.1 to 0.5 gm. lecithin, or it was administered in subcutaneous injections of 0.05 to 0.15 gm. repeated every second day. The appetite and weight increased, and no evil effects were observed even on prolonged administration of lecithin derived from eggs.

Therapie der Gegenwart (Berlin), November.

Bismuth Treatment of Gastric Ulcer. W. FLEINER.—In the treatment of a gastric ulcer the aim is to induce the stomach to contract to the smallest possible size and keep it in this condition. The slightest relaxation of the tonus of the stomach walls must be combated with ice-bags or hot applications or the thermophore. If the bottom of the ulcer is fibrous and indurated, the edges do not become approximated even when

the stomach is contracted to its minimum. The surface of the ulcer is thus exposed to mechanical and chemical irritation from the contents of the stomach, with consequent irritation, pain, vomiting, etc. It is possible to supply in these cases an artificial covering for the exposed surface of the ulcer by means of bismuth. The patient should drink, an hour before meals, 100 to 200 gm. of water into which 5 to 10 or 20 gm. of bismuth have been stirred. He should then lie down on the affected side. In order to cleanse the stomach, 100 to 150 gm. of hot Carlsbad or Vichy water should be taken an hour before the bismuth. An ulcer will sometimes heal on a milk diet without medicines. The bismuth may be needed only during the transition from fluid to solid food. In case of an old, fibrous ulcer, the bismuth should be immediately preceded by thorough irrigation of the stomach until the water emerges clear. When the ulcer is complicated by stenosis of the pylorus, this treatment will relieve but will seldom cure, and an early gastro-enterostomy will relieve and heal during the time that is wasted on medicinal measures. The bismuth is contra-indicated in case the ulcer has formed in or developed a recess in the stomach wall. In the only case of this kind, in Fleiner's ten years of experience, the morning rinsing of the stomach brought up the bismuth crystals from the day before, not white as usual, but black, showing that the bismuth had undergone the chemical change which otherwise occurs only in the intestines.

Gazzetta Degli Ospedali (Milan), October 27.

Feeding in Febrile States. G. CAVALLERO.—The conclusions of this long study of the subject are that the same rules that regulate the feeding of patients in acute fevers should apply, although less strictly, to chronic febrile conditions. The food should be adapted to compensate for the exaggerated metabolism, which includes an increased destruction of the organic albumin, due partly to the lack of sufficient nourishment and partly to the bacterial intoxication. The products derived from the destruction of albumin, fats and carbohydrates are less completely oxidized than in normal conditions. A febrile patient requires approximately 25 to 30 calories per kilogram of body weight. Of this amount 4 or 5 can be supplied in the form of albumin, 5 or 6 as fats and 16 to 20 as carbohydrates. The chronic febrile patient requires more calories, possibly 35 to the kilogram of weight. He has to combat, besides the fever, some suppurative process in most cases. The depressing influence of the bacterial toxins must be counteracted by stimulants, tea, coffee or alcohol.

November 5.

Typhoid Peritonitis from Propagation. QUEIROLO.—The peritoneum has a wonderful resisting power against infection, but when the organism is under the influence of the typhoid toxins, this defense is broken down and peritonitis may ensue, either from perforation, or by infection from contiguity or propagation. Queirolo has examined cadavers which presented the typical lesions of typhoid peritonitis subsequent to a typical attack of typhoid fever, but the microscope was unable to disclose the slightest trace of a perforation at any point in the intestines. He states that a closed cavity is not necessary to enhance the virulence of the bacilli in the intestines. They may become virulent during typhoid fever at any time, and the rarity of peritonitis is due to the effective defense in spite of the lesions in the intestines, the gaping lymphatics, etc. Peritonitis does not occur without some lesion in the peritoneum. This may occur in the course of typhoid fever as a consequence of the general intoxication, which may possibly have a special predilection for the peritoneum in some cases. Another factor which may co-operate is the paresis of the intestines in typhoid fever. It realizes the two ideals, enhanced virulence of the bacteria and their prolonged sojourn at one spot. Study of typhoid patients has demonstrated that the typhoid process in the mucous membrane of the intestine may become propagated to the peritoneum by means of the veins and perivascular lymph routes without injuring the muscular coat, although traversing it in these vessels. He describes the autopsy findings in a typical case of typhoid propagation of this kind, which confirm his views in every point. He believes that the colon bacillus is the usual causal agent of peritonitis by propagation, although by no means specific. The differentiation of peritonitis from perforation and from propagation is extremely difficult, and yet surgical intervention, which is often the only means of saving life in the former, is contra-indicated in the latter. The symptoms occur in each with the same tempestuous onset. The sudden drop in the temperature which some have mentioned as the invariable accompaniment of a perforation, does not always occur. The behavior of the pulse, the vomiting, the composition of the blood, are about the same in each form of peritonitis. The persistence of the liver and spleen dulness would aid in the differentiation, but can only be utilized too late for practical benefit. The amount of gas escaping through the perforation may be insufficient to mask this dulness, and thus allow its persistence. In this event, however, there would be no intestinal and peritoneal meteorism. Tardy disappearance of the liver and spleen dulness in the course of peritonitis from perforation, is probably due to the rigidity and contraction of the abdominal muscles. The prognosis of peritonitis from propagation is grave. Only about 50 per cent. recover. The treatment should aim to sustain and stimulate the heart, kidneys, innervation, etc., but the main point is to free the intestines from bacteria. This is the doctrine which Queirolo has been proclaiming so long and so urgently. He insists that peritonitis from propagation should not be allowed to develop. The intestines should be managed in such a way in typhoid fever that no favorable conditions for the development of peritonitis from propagation should be allowed to exist. The intestines should be evacuated with calomel and thoroughly disinfected and the feeding should be exclusively rectal, entirely avoiding the gastric route. He finds that ice-bags on the abdomen diminish the natural resisting powers of the peritoneum.

Hydatid Fremitus in Simple Ascites. A. CAVAZZANI.—An extensive and typical hydatid fremitus was observed in the abdomen of a subject with simple ascites from cirrhosis of the liver. Studying the conditions that favored its production they were found to be the combination of extremely thin walls, high tension and the contact of loops of intestine, full of gas and fluids, held against the abdominal wall by the enlarged malarial spleen. Cavazzani reproduced these conditions artificially and was able to produce the hydatid fremitus at will.

November 7.

The Clinical Value of the Diazo-Reaction. A. LAMARI.—Judging from his study of 800 tests for the diazo-reaction, Lamari does not ascribe any absolute diagnostic value to it, but in connection with other signs it may afford very valuable information. He states that the gastric or other organic juices may exhibit the diazo-reaction when it is absent in the urine. It is influenced by the medication, and diminishes as the amount of urine is increased. It appears in certain urines only after they have been boiled down or decolored with lead nitrate. Salol attenuates and naphthalin accentuates the reaction. In one of his patients the reaction became positive in the gastric juice after it had disappeared from the urine.

November 17.

Effects of Tetanus Toxin in Relation to Its Entering Point. G. TIZZONI and M. COLLINA.—There is a great difference between the effects of tetanus toxin when it is injected under the skin or under the dura or directly into the circulation. The two latter methods require much larger doses to prove fatal in rabbits. It seems to be evident that a certain portion of the toxin in these cases is neutralized by the blood or cerebrospinal fluid. In case of subcutaneous injection, the phenomena of exaggerated reflex excitability predominate; injected into the blood the phenomena of muscular rigidity prevail, while the subdural injection, accompanied by a lesion of the surface of the brain, induces the classical picture of cortical irritation. With an endocerebral injection, the symptoms are those of lesions of the centers. The phenomena observed when the toxin is injected into the blood indicate that the element in the toxin which causes the convulsions is neu-

tralized by the blood. If the blood is extremely toxic in a case of tetanus it is probably a sign of an extraordinary production of toxin over and above what the blood can neutralize, and is thus an unfavorable sign. A great difference was observed in the tests between the behavior of Tizzoni's and Behring's tetanus toxin, indicating a different composition, and possibly the presence of accessory toxins. These accessory toxins, impurities in the serum, explain why the experimental successes were not confirmed on man, when purer toxins were used. Only when the serum obtained after inoculation with toxin containing these accessory substances is applied in a case in which these accessory substances also happen to be present, is a cure probable.

Brazil-Medico, October 15.

Intravenous Mercurial Treatment of Werlhof's Disease. A. LUSIGNOLI.—Six cases are described which apparently prove that hemorrhagic diseases are caused by some specific microorganism whose products pass into the blood. Scorbutus, purpura, etc., are all of the same nature, and differ merely in intensity. They can be cured by a daily intravenous injection of 1 to 3 mg. of mercury bichlorid, repeated daily for four to seven days.

Roussky Archiv Pathologii (Moscow), xi and xii.

Mechanical Treatment of Anasarca. A. BROIDE.—Dehio's rubber bandage and funnel for the mechanical treatment of anasarca has been applied in 15 cases with great success. It should not be used as a last resort, but should be applied in the early stages after scarification of the spot.

Typhoid Bacilli in the Urine. W. KLIMENKO.—Sixty-five patients with typhoid fever were carefully investigated to determine the persistence of the bacilli in the urine. They usually disappear by the third to the thirtieth day, but in a few rare cases, persisted a year. By administering a substance that has an antiseptic action on the urine it might be possible to disinfect such patients. Bacteriologic investigation of the urine might clear up obscure cases of typhoid fever.

Queries and Minor Notes.

REQUIREMENTS OF HONOLULU, CUBA AND MEXICO.

MARIONA, VA., Nov. 22, 1901.

To the Editor:—Can you give the law or laws governing the practice of medicine in Honolulu, Cuba and Mexico? Z. U. S.

ANS.—We have no verified copies of the laws of Cuba, Hawaii and Mexico at the present time. In Mexico it appears to be largely a matter of identification; an account of the preliminary requirements, which are very elaborate, was published in THE JOURNAL, Dec. 23, 1899. After all the affidavits, etc., it is said that the examination may or may not be required according to the judgment of the governor of the state in which one chooses to practice. It seems to be required in the City of Mexico, and may be elsewhere. Many foreign physicians practice without any license in Mexico, but this is dangerous.

New Patents.

Patents of interest to physicians, etc., November 19 and 26:

687,112. Uterine curette. Seth D. Bowker, Kansas City, Mo.
687,004. Hot-water bag. Frank E. Crawford, Lake Mills, Wis.
687,181. Hot-air bath. Frederick C. Dilthey, Rockville Center, N. Y.
687,139. Nasal cup. Wm. J. Evans, New York City.
686,855. Making a disinfectant. Wm. T. Kendrick, Montgomery, Ala.
686,859. Electric generator and distributor for medical treatment. Edwin L. Madden, Kanawha, Iowa.
686,947. Making carbonate of magnesia. Wm. Marsh, Manchester, Eng.
686,985. Syringe. John M. Miller, Dayton, Wash.
686,831. Invalid bedstead. Wm. A. Nason, Algonquin, Ill.
687,367. Hypodermic syringe. Chester M. Barton, Hatfield, Mass.
687,199. Pill-forming machine. Arthur Colton, Detroit, Mich.
687,617. Mouth illuminator. Edward Ebi, Cedar Rapids, Iowa.
687,376. Inhaler. John Harrison, New York City.
687,243. Massage machine. Francis King, San Francisco, Cal.
687,441. Vaginal syringe. Willis L. Short, Butler, Mo.
687,358. Box for holding pellets, capsules, etc. B. S. Whitehead, Newark, N. J.
687,363. Massage device. Paul E. Wirt, Bloomsburg, Pa.
35,315. Design, ice or hot-water bag. Christian W. Meinecke, Jersey City, N. J.
35,214. Design, blank for speculum blades. Charles J. Pilling, Philadelphia.
35,313. Design, massage device. Paul E. Wirt, Bloomsburg, Pa.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

PHOTOTHERAPY: (1) The Chemical Rays of Light and Smallpox. (2) Light as a Stimulant. (3) The Treatment of Lupus Vulgaris by Concentrated Chemical Rays. By Professor Niels R. Finsen, Copenhagen. Translated from the German Edition, with an Appendix on the Light Treatment of Lupus, by James H. Sequeira, M.D. Lond., M.R.C.P., Dermatological Assistant and Medical Officer in Charge of the Light Department at the London Hospital. Cloth. Pp. 79. Price, $1.75. London: Edward Arnold. 1901.

THE PRINCIPLES OF PATHOLOGICAL HISTOLOGY. By Harvey R. Gaylord, M.D., Professor of Surgical Pathology in the University of Buffalo; and Ludwig Aschoff, M.D., Professor and First Assistant in the Pathological Institute of the University of Göttingen, Germany. With an Introductory Note by William H. Welch, M.D., Baltimore. Illustrated with 81 Engravings in the Text and 40 Full-page Plates. Cloth. Pp. 359. Price, $7.50 net. Philadelphia and New York: Lea Brothers & Co. 1901.

THE ROENTGEN RAYS IN MEDICINE AND SURGERY, as an Aid in Diagnosis and as a Therapeutic Agent, Designed for the Use of Practitioners and Students. By Francis H. Williams, M.D. (Harv.). Graduate of the Massachusetts Institute of Technicology. With 391 Illustrations. Cloth. Pp. 658. Price, $6.00. New York: The Macmillan Co. 1901.

TOXICOLOGY. The Nature, Effects and Detection of Poisons, with the Diagnosis and Treatment of Poisoning. By Cassius M. Riley, M.D., Professor of Chemistry and Toxicology in Barnes Medical College, St. Louis, Mo. Cloth. Pp. 121. Price, $1.25. Published by the Author. 1901.

A PRACTICAL GUIDE TO THE ADMINISTRATION OF ANESTHETICS. By R. J. Probyn-Williams, M.D., Senior Anesthetist and Instructor in Anesthetics at the London Hospital. Cloth. Pp. 211. Price, $1.60. London, New York and Bombay: Longmans, Green & Co. 1901.

TRANSACTIONS OF THE TWENTY-THIRD ANNUAL MEETING OF THE AMERICAN LARYNGOLOGICAL ASSOCIATION, Held at New Haven, Conn., May 27, 28 and 29, 1901. Cloth. Pp. 274. New York: Rooney & Otten Printing Co. 1901.

TRANSACTIONS OF THE ARKANSAS MEDICAL SOCIETY. Twenty-Sixth Annual Session. Held at Hot Springs, Ark., May 14, 15, 16, 1901. Paper. Pp. 253. Little Rock: Thompson Litho. and Ptg. Co. 1901.

THE PHYSICIAN'S VISITING LIST for 1902. Fifty-first Year of Its Publication. Leather. Price, for 25 patients per day or week, $1.00. Philadelphia: P. Blakiston's Son & Co. 1901.

TRANSACTIONS OF THE RHODE ISLAND MEDICAL SOCIETY. Vol. VI. Part II. Paper. Pp. 277. Providence. Snow & Farnham. 1901.

PROCEEDINGS OF THE PHILADELPHIA COUNTY MEDICAL SOCIETY. October. Paper. Pp. 41. Philadelphia: Published by the Society.

TRANSACTIONS OF THE CHICAGO PATHOLOGICAL SOCIETY. Nov. 11, 1901. Paper. Pp. 29.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Nov. 28 to Dec. 4, 1901, inclusive:

William B. Banister, major and surgeon, U. S. A., from the Division of the Philippines to San Francisco, Cal., reporting on arrival, by telegraph, to the Adjutant-General of the Army.

Henry P. Birmingham, major and surgeon, U. S. A., relieved from duty in the Division of the Philippines and assigned to Fort Leavenworth, Kan.

James R. Church, lieutenant and asst.-surgeon, U. S. A., leave of absence on certificates of disability from the Department of Cuba is extended two months on account of sickness.

Harry A. Eberle, captain and asst.-surgeon, Vols., former orders so amended as to direct him to report on his arrival at Manila, P. I., to the commanding general for assignment in the Division of the Philippines.

Euclid B. Frick, captain and asst.-surgeon, U. S. A., member of a board at San Juan, P. R., to examine certain persons as to their fitness for appointment as lieutenants in the army.

Henry S. T. Harris, major and surgeon, U. S. A., leave of absence for seven days granted.

Arthur C. Heffenger, contract surgeon, previous orders requiring him to report for duty at Fort Constitution, N. H., revoked.

Merritte W. Ireland, captain and asst.-surgeon, U. S. A., on being relieved from duty as medical supply officer at Manila, P. I., by Major W. O. Owen (see below), to proceed to San Francisco, Cal., and report to the Adjutant-General of the Army for further orders.

James P. Kimball, lieut.-col., deputy surgeon-general, leave of absence on certificates of disability extended four months.

John S. Kulp, captain and asst.-surgeon, U. S. A., leave of absence for fifteen days granted, to take effect about Dec. 20, 1901.

John F. Leeper, contract surgeon, relieved from temporary duty at Jefferson Barracks, Mo.; on the expiry of his present leave of absence he will proceed from Casper, Wyo., to San Francisco, Cal., en route for duty in the Division of the Philippines.

Jose Lugo-Vina, captain and asst.-surgeon, Porto Rico Provisional Regiment of Infantry, member of a board at San Juan, P. R., to examine certain persons as to their fitness for appointment as lieutenants in the army.

William C. LeCompte, captain and asst.-surgeon, Vols., so much of orders of November 14 last as relates to Contract Surgeon William C. Le Compte is amended to read Captain William C. Le Compte, asst.-surgeon, Vols.

John A. Murtagh, lieutenant and asst.-surgeon, U. S. A., former orders so amended as to direct him on the expiration of his present leave of absence to proceed to Fort McPherson, Ga., to accompany a battalion of the 27th Infantry to San Francisco, Cal.

William O. Owen, major and surgeon, U. S. A., previous orders amended so as to direct him on his arrival at Manila, P. I., to report to the commanding general for duty as medical supply officer, relieving Captain Merritte W. Ireland, asst.-surgeon, U. S. A.

Charles Richard, major and surgeon, U. S. A., from Fort Leavenworth, Kan., to San Francisco, Cal., en route for assignment in the Division of the Philippines.

Navy Changes.

Changes in the Medical Corps of the Navy for the week ended December 7:

P. A. Surgeon H. H. Haas, detached from Norfolk Navy Yard, and to the *Kearsarge*, for duty with the marine detachment.

Asst.-Surgeon F. M. Furlong, when detached from New York Hospital, ordered home on sick leave for two months.

Asst.-Surgeon P. E. McDonald, detached from the *Constellation*, when discharged from Naval Hospital, New York, and ordered home with one month's sick leave.

Asst.-Surgeon W. M. Garton, detached from the Naval Academy and ordered to the Naval Hospital, New York.

Asst.-Surgeon J. B. Dennis, detached from the Naval Hospital, New York, and ordered to the Naval Academy, upon reporting of relief.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the twenty-one days ended Dec. 5, 1901:

Surgeon Eugene Wasdin, granted leave of absence for 21 days from December 19.

Surgeon W. P. McIntosh, to proceed to Illijay, Georgia, for special temporary duty.

P. A. Surgeon H. D. Geddings, detailed to represent the service at a conference of health officers at Ann Arbor, Mich., November 21 and 22. Upon adjournment of said conference to proceed to Detroit, Mich, for special temporary duty.

P. A. Surgeon A. R. Thomas, relieved from duty at Liverpool, Eng., and assigned to duty in the office of the United States Consul-General at Glasgow, Scotland.

Asst.-Surgeon R. H. von Ezdorf, granted leave of absence for two months and fourteen days from November 23.

Asst.-Surgeon J. F. Anderson, relieved from duty at the Immigration Depot, New York City, and assigned to duty in the office of the United States Consul at Liverpool, Eng.

Asst.-Surgeon V. G. Heiser, to proceed to St. Johns, N. B., for duty in the office of the United States Commissioner of Immigration.

Asst.-Surgeon Carroll Fox, relieved from duty at Port Townsend quarantine, and temporary duty at Port Townsend, Wash., and directed to report to Asst.-Surgeon J. F. Anderson for duty in the office of the United States Consul at Liverpool, Eng.

Asst.-Surgeon T. B. McClintic, granted leave of absence for one month from December 11.

A. A. Surgeon Francis Duffy, granted leave of absence for seven days from November 25.

Surgeon W. P. McIntosh, granted leave of absence for three days from November 26.

P. A. Surgeon H. S. Cumming, relieved from duty at South Atlantic Quarantine. Granted leave of absence for seven days from November 29.

Asst.-Surgeon G. M. Corput, directed to assume command of the South Atlantic Quarantine Station, relieving P. A. Surgeon H. S. Cumming.

Asst.-Surgeon J. S. Boggess, granted leave of absence for ten days from December 5, with permission to leave the United States.

A. A. Surgeon Felix Giralt, upon being relieved by A. A. Surgeon S. H. Hodgson, to rejoin station at Havana, Cuba.

A. A. Surgeon E. B. Hallett, granted leave of absence for two days from November 28.

A. A. Surgeon S. H. Hodgson, relieved from duty at Progreso, Mexico, and assigned to duty in the office of the United States Consul at Vera Cruz, Mexico.

A. A. Surgeon J. A. Rowles, granted leave of absence for four days from November 27.

Hospital Steward S. W. Richardson, relieved from special temporary duty at Buffalo, N. Y., and directed to proceed to Washington, D. C., and report to the Director of the Hygienic Laboratory for temporary duty.

A. A. Surgeon V. B. Gregory, directed to report for duty.

A. A. Surgeon J. S. Hough, relieved from duty at Hong Kong, China, and assigned to duty in the office of the United States Consul-General at Yokohama, Japan.

A. A. Surgeon S. B. Hunter, granted leave of absence for ten days from November 7.

A. A. Surgeon A. P. McConnell granted leave of absence for three days from November 27.

A. A. Surgeon C. L. Moore, relieved from duty at Boston, Mass., and directed to proceed to New York City, and report to Surgeon G. W. Stoner at the Immigration Depot for duty.

Surgeon H. W. Austin, to report at Washington, D. C., for special temporary duty.

Surgeon F. W. Mead, granted leave of absence for one day, December 10.

Surgeon H. R. Carter, detailed as inspector of the port of Solomons, Md.

Surgeon T. B. Perry, relieved from duty at Baltimore, Md., and directed to proceed to New York City, and report to Surgeon G. W. Stoner, Immigration Depot, for duty.

P. A. Surgeon Rupert Blue, relieved from special temporary duty at San Francisco, Cal., and directed to rejoin station at Milwaukee, Wis.

P. A. Surgeon H. S. Cumming, to proceed to San Francisco Quarantine, Cal., and report to Surgeon D. A. Carmichael for duty, reporting at Bureau en route.

Asst.-Surgeon W. C. Hobdy, to proceed to Elberton, Ga., for special temporary duty.

Asst.-Surgeon A. J. McLaughlin, to proceed to Cape Fear Quarantine, and assume temporary command of station during absence of Asst.-Surgeon T. B. McClintic, on leave.

Hospital Steward S. W. Richardson, relieved from temporary duty in the Hygienic Laboratory, Washington, D. C., and directed to proceed to Charleston, S. C., and assume charge of the Marine Hospital exhibit at the South Carolina Interstate and West Indian Exposition.

BOARD CONVENED.

Board convened to meet at Washington, D. C., Nov. 18, 1901, for the physical examination of candidates for appointment to the grade of second assistant engineer in the Revenue Cutter Service. Detail for the Board: Surgeon R. H. Woodward, chairman; Assistant-Surgeon B. S. Warren, recorder.

APPOINTMENT.

W. S. Jackson, of Michigan, appointed acting assistant-surgeon, for duty at Houghton, Mich., Nov. 12, 1901.

RESIGNATION.

Hospital Steward W. F. Schlaar resigned, to take effect Nov. 15, 1901.

CASUALTY.

A. A. Surgeon Stuart Eldridge, died at Yokohama, Japan, Nov. 16, 1901.

Health Reports.

SMALLPOX—UNITED STATES.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Dec. 6, 1901:

Alabama: Gilmer County, Nov. 26, 10 cases.
Illinois: Springfield, Nov. 1-30, 30 cases.
Indiana: Evansville, Nov. 23-30, 2 cases.
Kentucky: Lexington, Nov. 23-30, 4 cases.
Louisiana: New Orleans, Nov. 23-30, 2 cases, 1 death.
Maryland: Baltimore, Nov. 23-30, 1 case.
Massachusetts: Boston, Nov. 23-30, 103 cases, 8 deaths; Cambridge, Nov. 23-30, 1 case, 1 death; Lowell, Nov. 23-30, 1 case; Malden, Nov. 23-30, 1 case; Medford, Nov. 23-30, 1 case; New Bedford, Nov. 26-Dec. 2, 2 cases; Newton, Nov. 23-30, 1 death.
Minnesota: Minneapolis, Nov. 22-29, 4 cases; Winona, Nov. 23-30, 2 cases.
Nebraska: Nov. 23-30, Omaha, 4 cases; South Omaha, 16 cases.
New Jersey: Camden, Nov. 23-30, 5 cases; Jersey City, Nov. 24-Dec. 1, 11 cases; Newark, Nov. 23-30, 26 cases, 4 deaths.
New York: Buffalo, Nov. 9-26, 36 cases, 3 deaths; New York, Nov. 23-30, 16 cases, 2 deaths.
Ohio: Cincinnati, Nov. 22-29, 6 cases; Dayton, Nov. 23-30, 1 case; Youngstown, Nov. 16-30, 3 cases.
Pennsylvania: Allegheny City, Nov. 23-30, 3 cases; Lebanon, Nov. 23-Dec. 1, 4 cases; Norristown, Nov. 23-30, 5 cases; Philadelphia, Nov. 23-30, 113 cases, 14 deaths.
Tennessee: Memphis, Nov. 23-30, 2 cases; Nashville, Nov. 23-30, 2 cases.
Utah: Salt Lake City, Nov. 30, 1 case.
Vermont: Burlington, Nov. 23-30, 7 cases.
Washington: Tacoma, Nov. 16-23, 3 cases.
Wisconsin: Green Bay, Nov. 26-Dec. 2, 9 cases.

SMALLPOX—FOREIGN.

Austria: Prague, Nov. 2-16, 8 cases.
Belgium: Antwerp, Nov. 2-16, 6 cases, 2 deaths; Brussels, Nov. 9-16, 1 death.
Canada: Halifax, Nov. 23-30, 9 cases; Quebec, Nov. 23-30, 27 cases; St. John, Nov. 23-30, 2 deaths; Winnipeg, Nov. 23, 5 cases.
Colombia: Cartagena, Nov. 12-19, 3 cases; Panama, Nov. 18-25, 100 cases.
France: Paris, Nov. 9-16, 3 deaths.
Gibraltar: Nov. 9-17, 1 case.
Great Britain: London, Nov. 9-16, 368 cases, 16 deaths.
India: Calcutta, Oct. 26-Nov. 2, 1 death.
Italy: Naples, Nov. 2-9, 29 cases, 2 deaths.
Mexico: Alvarado, Nov. 24, 1 case.
Russia: Moscow, Nov. 2-9, 9 cases, 4 deaths; Odessa, Nov. 9-16, 2 cases.
Spain: Barcelona, Oct. 19-Nov. 2, 2 deaths; Valencia, Nov. 5-19, 20 deaths.
Straits Settlements: Singapore, Oct. 12-19, 1 case, 1 death.

YELLOW FEVER.

Brazil: Para, Oct. 1-31, 177 cases, 56 deaths.

CHOLERA.

India: Bombay, Oct. 30-Nov. 5, 2 cases: Calcutta, Oct. 26-Nov. 2, 32 deaths; Madras, Oct. 26-Nov. 2, 32 deaths.
Java: Batavia, Oct. 19-26, 19 cases, 15 deaths.
Straits Settlements: Singapore, Oct. 5-26, 15 cases, 15 deaths.

PLAGUE—FOREIGN AND INSULAR.

India: Bombay, Oct. 30-Nov. 5, 173 cases, 173 deaths; Calcutta, Oct. 26-Nov. 2, 24 deaths; Karachi, Oct. 26-Nov. 2, 66 cases, 38 deaths.
Hawaiian Islands: Honolulu, Nov. 13, 1 death.